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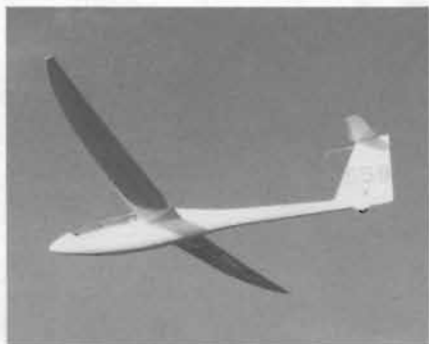
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SAILPLANE & GLIDING

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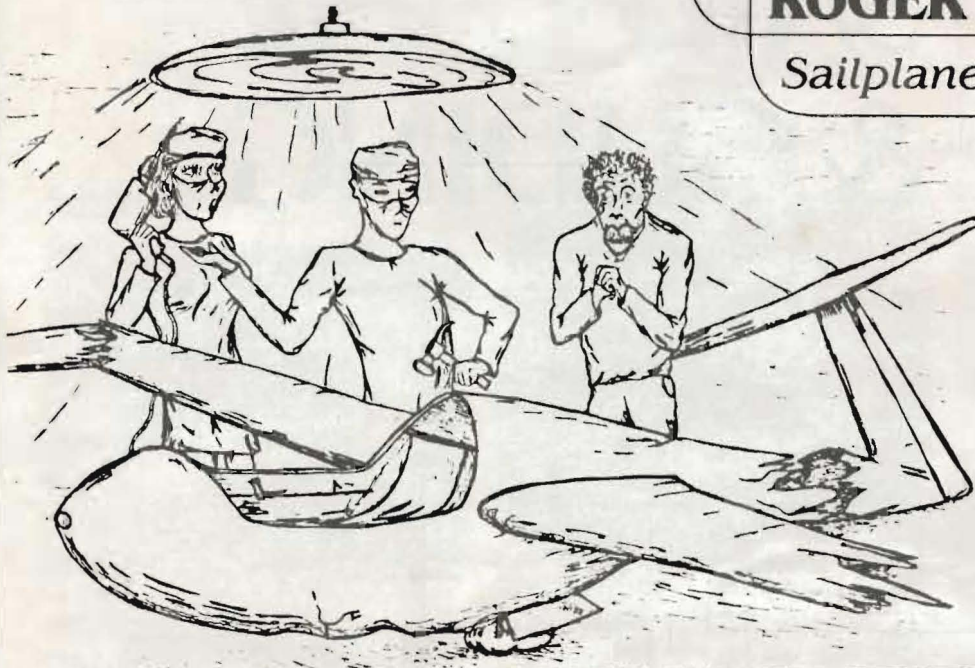
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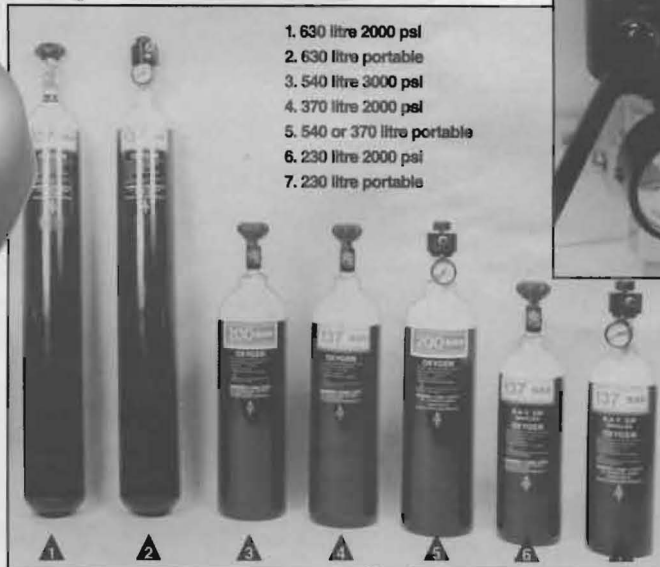
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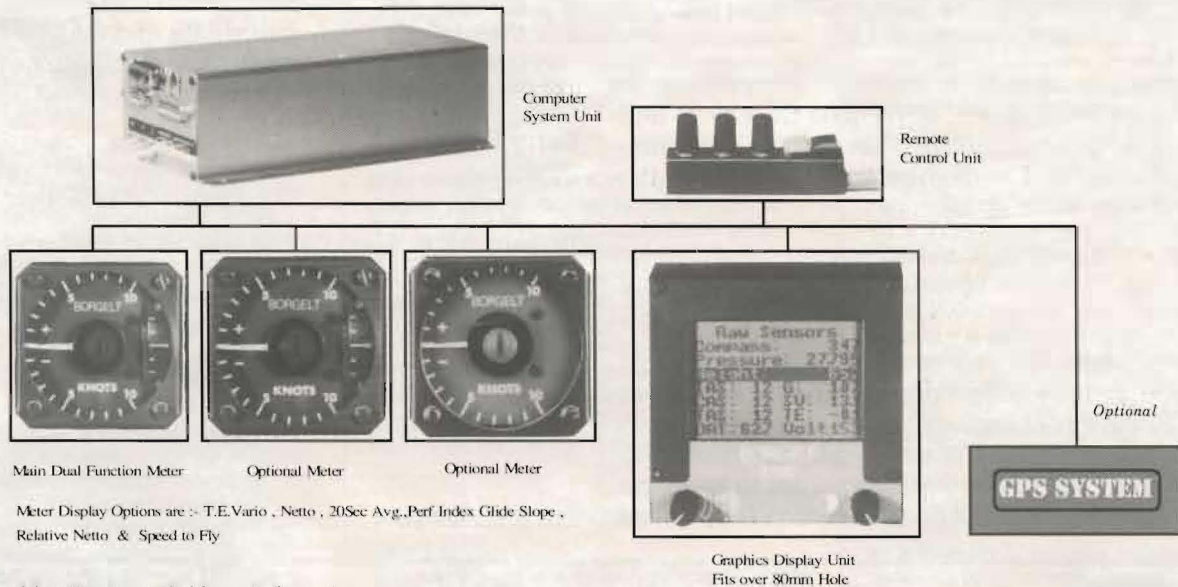
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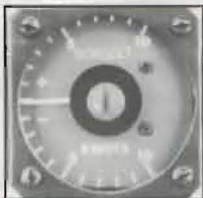
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CHART UPDATE

RE-LEARN TO GLIDE IN A WEEK

Dear Editor,

I would like to respond to Mike Cuming's challenging article "Learn to Glide in a Week..." in the April issue, p88, no doubt written in the hope of stirring some debate – one in which I am happy to take part.

While accepting that time-wasting when learning to glide is legendary, I view the solutions put forward by Mike with more than a little scepticism.

First, I am all in favour of course members knowing what they will get, with money back guarantees if their promised flying quota is not completed. However, the aim of any gliding course is to train its students to become glider pilots. I know that an instructor of Mike's experience appreciates that with regard to instruction, **quality** is paramount. **Not** quantity.

Mike states that each student could complete ten launches (or the equivalent of 2½hrs gliding time) per day. This does not necessarily mean they will receive good instructional value. Unlike your average Air Cadet who as a teenager is at an age where information should be readily absorbed, typical gliding course students reflect a whole range of ages and abilities and each person has a different rate of learning. Although some take to the sport like a duck to water, others need time in which to assimilate and reflect upon what they have just been taught – cramming does not facilitate this. Knowledge and skills are acquired – not forced.

A further concern of mine is whether his instructors will be able to maintain quality, bearing in mind the quantity of instruction they will be giving on a daily basis. Mike states that each instructor will have up to three students. As each student is being guaranteed 2½hrs flying/day, an instructor will be required to be in the air for 7½hrs/day. Even assuming the day is spent winch launching, given the same student to instructor ratio of 3:1, and that each launch takes 15min this too requires 7½hrs/instructor/day. This is allowing 5min air time with a very expeditious 5min before and 5min after the launch for briefing, strapping in, debriefing, exiting and retrieving. This doesn't seem to leave much time for any lengthier briefings or theory. Neither does it give the instructor much time to have sensible refreshment breaks; and

a tired instructor will not only give less valuable instruction but, ultimately, can be detrimental to safety.

Despite my doubts about this venture. I think Mike deserves praise for putting his ideas into practice, and I hope he will write another article at the end of the season giving details of both the percentage of students who soloed on his courses and their previous flying experience so that all BGA clubs who intend running courses, can benefit from his experiences.

KEN STEWART, *London*

Mike Cuming replies: Ken is quite right in his assessment of the launches and hours to be flown by my instructors. Luckily the target is **either** ten launches **or** 2½hrs but not both. Also, the rate of 3:1 is our absolute maximum and we normally operate on 2:1 or 2½:1. The targets are all being set and we're having a lot of fun with 15 first solos so far in six weeks of operation. I shall indeed write up the results for *S&G* later in the year. Meanwhile the courses are filling well and about 30% of pupils are re-booking so we can't be doing too badly.

VARIOMETER SYSTEMS

Dear Editor,

In preparing a lecture on cross-country flying I was considering how to deal with the interpretation of variometer lag – variously quoted as up to 3sec. However a question to which I could not find the answer arose whether this lag changes as the strength of lift changes?

Variometers work on the basis of changes in pressure and there needs to be a difference in pressure between static and reservoir or bottle for the vario to operate. The operational lag is caused, as I understand it, by the time it takes for this difference to develop and is in the order of about ½mb.

Logically, therefore, the quicker this change in pressure develops, the quicker the variometer will register. If this is true then variometer lag is dependent on the strength of the lift (or sink) as well as the efficiency of the system. Therefore the lag will vary even as you circle in and out of the lift and could alter one's approach to best/worse heading methods of centring in thermals.

For example, the time taken to climb/

descend ½mb (say 15ft) at 1kt is about 9sec whereas the equivalent at 5kt is 1.8sec. One rarely, if ever, flies directly into lift/sink – there is usually a transition – but our awareness of this would be foreshortened if the variometer lag is greater at low acceleration. In other words, the period between the first indication and the peak would be shorter than the actual time taken to fly through the transition. The notes I have read infer that what you observe on the vario is the correct period – just displaced in real time by the lag.

Please be assured that I do not present this notion as a fact or even a theory, but I do believe that the implications are worth considering and explaining in your magazine.

NEIL KELLY, *London*

Frank Irving replies: The expression "variometer lag" is often used rather loosely. It suggests that the readings of the vario are correct, but are displayed a little belatedly. The reality is rather more complicated.

Any variometer which depends on measuring the flow in and out of a capacity will have an exponential type of response with a characteristic "damping time", here denoted by "T", which might well be of the order of 3sec. Suppose that we are initially in zero sink and suddenly start to climb at a constant rate. The variometer reading will start to increase in such a fashion that it shows 63% of the actual rate of climb after a time T has elapsed, 90% after 2.3T, and 99% after 4.6T. In principle, it will never quite get to the true figure, but most people would be happy to settle for 90%. For a given damping time, the above percentages are independent of the value of the rate of climb. If the damping time is 3sec and the rate of climb is 5kt, the vario will read 3.15kt after 3sec, 4.5kt after 6.9sec and 4.95kt after 13.8sec.

A more realistic situation is that one is initially sinking and then runs into lift. Assume that both the sink and the lift are steady and that the glider responds instantaneously. Then the response of the variometer to the rate of climb will be as described above but superimposed upon it will be an exponentially decaying sink figure. If we were initially sinking at 2kt and then suddenly started climbing at 5kt, the indicated climb figures corresponding to the same times as above would be 2.41, 4.30 and 4.93kt. So



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the vario takes a little while to forget about the previous sink and it might appear momentarily that the lag has increased.

In any decent variometer, the flow in and out of the capacity, and the corresponding indications, will all behave smoothly and there is no question of waiting until some finite pressure difference such as $\frac{1}{2}$ mb has developed. There may, of course, be exceptions to the above remarks. Cosim variometers and those which do not require a capacity may behave differently.

SIGNALLING LIGHTS

Dear Editor,

Perhaps the silly season is upon us but I do wonder whether Jeffery Goodenough in his letter in the last issue, p129, has his tongue partially in his cheek as well as raising valid and interesting points which I believe fall under two interlinked headings.

1.

The actual derivation of glider light signalling is almost certainly based on the morse code from the days when the code was more universally used. My 1943 copy of the fourth edition of the little booklet "The New Morse Code Manual" by F/O E.W. Eley was used as a basic source by HM Services, ATC etc, and on p15 states:-

- a) A **dash** is equal to three **dots**.
- b) The space between parts of the same letter is one **dot**.
- c) The space between two letters is equal to three **dots**.
- d) The space between two words is equal to five **dots**.

In the RAF, operators under training had a weekly morse test where their sending was recorded as an interrupted line on a paper tape and this was used as a basis to check that the various relationships were right. I hope this clears the ratio confusion.

However having said all that

2.

- a) In signalling by lights the most important aspect is a clear visual distinction between the "Up slack" and the "All out" flash rate and not necessarily the speed.
- b) The "All out" signal governed the time relationship to the "Up slack" as the old filament type car light bulbs have a time lag in their light

emission decay after being switched off. This decay defines the maximum rate of flash for clear and distinct "All out" compared to the "Stop" signal (constant light) to avoid potential confusion.

- c) The modern quartz halogen type bulbs have a much quicker response time and the "All out" rate may thus be speeded up.
- d) The relationship between "Up slack" and "All out" must be quite obvious and very clear and a time ratio of about three to one seems to be visually satisfactory.
- e) Due to each individual's variation in manually timing light signals it can become ambiguous to the winch driver, possibly leading to an unsafe situation. To avoid this potential conflict/problem an automatic mechanical/electronic device is the desired method of providing consistent signals.

At Enstone we have just changed from auto and aerotow to a winch only operation and had to ascertain the various requirements from first principles so that the various requirements and conflicts could be resolved. This has been based on the knowledge and expertise of a number of old hands.

The various procedures and equipment now seem to be buttoned up and I am preparing an article with technical appendices covering the whole of the launch and signalling systems, describing the design and actual results together with the upgrading of ex ATC winches and CB Radio links in addition to the light signalling hardware, thus picking up various points Dick Stratton, BGA chief technical officer, has encouraged me to write about.
ROBIN PEARCE-BOBY, *Bletchington, Oxon*

ACHIEVEMENTS OF THE SGA

Dear Editor,

We refer to Tony Moss's letter in the last issue, p129, and his attempt at producing a humerous logo on behalf of the Scottish Gliding Association. (SGA). Unfortunately we will not be taking up his design as it seems to depict hang glider pilots rather than true glider pilots.

On a more serious note, however, Tony writes about the SGA replacing the BGA in Scotland which is not the case. The SGA was re-formed in 1986 with the aim to "Promote,

foster and develop the sport of gliding in Scotland." The constitution of the SGA states that "The association will be complementary to, and will not replace the services provided by the BGA."

Readers may be interested to learn that in the last six years we have achieved:-
Reciprocal memberships between all Scottish clubs.
Subsidised instructor training programme.
Financial help for a team to compete in the Glider Aerobatic Championships in Poland in 1991.
A grant aided Pawnee tug for the SGU at Portmoak.

At time of writing we are about to take delivery of an ASH-25 with full competition standard instrumentation.

Finally referring again to Mr Moss's letter, the only border or frontier in gliding is that which exists in the mind. We in Scotland have a warm welcome for pilots from the world of gliding to share with them Scotland's unique soaring conditions.
GLEN DOUGLAS, *honorary SGA chairman*

MANNERS AND MUTUAL RESPECT

Dear Editor,

Last Sunday I did my first field landing of the year. I assumed the large house next to the field contained the landowner and presented myself to apologise and use the phone.

I was returning to the glider when the real landowner drove up in his car and asked what I thought I was doing landing in his field and not reporting to him. He was irate, given a previous pilot hadn't contacted him, and seemed to feel that next time there would be three or four gliders landing. He also threatened me with having to pay a £50 landing fee.

I spent some time explaining why I had landed, promised I would see him before I left and get the other pilot to speak to him - he went away happy but hadn't said anything about waiving the landing fee.

On my way to the village to wait for my crew I met the other pilot returning with his trailer and crew. I explained the situation and asked him to speak to the landowner and not take the trailer into the field (still thinking of the impending landing fee).

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But they took the trailer into the field and, when I later went to see the landlord (who said he would let the fee pass this time), I was told the pilot hadn't contacted him.

The other pilot knew there was an impending penalty and it seems to me that he left me to pick up the tab. Maybe he just forgot but I think you will agree that such behaviour doesn't enhance our standing with farmers. Also, what about the camaraderie between glider pilots and good manners?

DERRICK STEED, *Camberley, Surrey*

AN ENGINE IS THE ONLY WAY

Dear Editor,

I read with interest John Jeffries superior and holier than thou letter in the April issue, p69, and I assume that at least part of his tongue was firmly in his cheek! I own one of the objects of his derision – a PIK 20E – and would like to present my viewpoint.

On balance, like John, I would prefer to be a purist. However, I suspect unlike him, due to a time-demanding career and an equally demanding young family, I have very little time indeed to devote to the sport. Consequently, despite having been a member of my club for several years, I know very few fellow members well enough to ask them to hold themselves in eager readiness for a retrieve if I should fall to earth at some far-flung corner of a triangle.

This, allied with the fact that I may be scheduled to take one of Mr Boeing's products on a lengthy O/R in the wee hours of the morning or, more seriously, have promised to take the children swimming, has in the past dampened my enthusiasm for serious cross-country flying.

In fact the problem so affected my enjoyment of the sport that I parted with my half of a Kestrel and virtually left gliding for a couple of years. My exile finished when I bought the PIK which allowed me to set forth on a cross-country happy in the knowledge that if the worst

came to the worst I could deploy the engine and come home.

I don't agree with John that I approach challenges and decision making any differently. The engine merely gives me more independence and freedom – the ingredients that form such an intrinsic part of the joys of cross-country soaring. In fact, in 14 months' of ownership I have only deployed the engine once in anger.

As always the proof lies with the eating and in those 14 months I have flown more serious cross-countries than probably in the previous 14 years and I now enjoy my gliding and am more infatuated with this wonderful sport than every before.

For me, at the moment, it is the only way.
JOHN MORGAN, *Cogenhoe, Northants*

John Jeffries replies: John will have noticed that in my letter I did say "that there is a case for the turbo I would not dispute..." For him obviously there is just such a case. But, less obviously, why, since he feels the engine is such good news, would he "... prefer to be a purist"? It would be fascinating to know on what he thinks he is missing out – superiority or holiness perhaps?

THERE'S NO ANSWER TO THIS!

Dear Editor

Having seen my photo in the last issue, p168, I think I had better get in with a quote (excuse for re-working of hoary old joke) before the resident columnists get there first:

Yes, I suppose a blind tug pilot is pretty unusual, but Becky or Sal, the Mynd resident sheepdogs, know all the launch directions. They guide me out to the tug and then sit in the hopper; the lid had just closed in the photo.

"All the instruments are in Braille; I get "Take up slack" and "All out" on the radio, with the dog making sure I'm pointing in the right

direction. Then I open the throttle steadily and off we go: I listen very carefully and when I hear a thin, high-pitched scream from the glider, I pull back on the stick.

My "shades" are ex-MoD of some past era and are rather smaller than the currently fashionable Ray-Bans, etc, hence the John Lennon (Blind Pugh) look.

MARK WAKEM, *Chester*

THE SOLUTION FOR PLATYPUS

Dear Editor,

I read with much amusement and great sympathy Platypus's piece in the last issue, p143, on the trials and tribulations of finding the right kit for gliding.

I think I have found a solution to your woes. There's a company called Rohan that makes lightweight clothing for the hot, the cold and the in between. (See the June 1991 issue, p143.) Their trousers (they call them "bags") and jackets have lots of pockets (though admittedly not all accessible once the parachute is on). The pockets are large and most have zips. The material they use have been made to "breathe" so you stay comfortable when you might have been sticky. Their kit is rugged and it is easy to care for. I'm devoted and no one's yet called me the Dynarod Man!

Best of all you can get it mail order. Tel No. 0908 216655 and they will send you a catalogue and no, they're not paying me to write this.

JACK ALCOCK, *Fringford, Oxon*

We welcome your letters but please keep them as concise as possible and include your full name and address. We reserve the right to edit and select.

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It really began at Issoire where we were present during various record flights from 1958 to 1960 and we heard people talking about projects for long distance flights in wave. Several years later Gerard, while honeymooning at Alicante, started to think about wave flying across Spain.

About the same time we came to the conclusion that the wave days at Issoire corresponded with the wave days at St Auban, Vinon, Beziers and La Llagone. By 1970, when we started commercial flying including flights to Spain and Morocco, we noticed wave along that route and recognised the ideal Met conditions that one day would permit such a flight. And Denise Cruets sent us the results of the work she had done for her Ph.D on the wave in Europe.

The Sailplane

To achieve such a flight it was necessary to have a high performance sailplane. Thanks to Air Inter and Vinon GCs the glider was the ASH-25F, CGCE, which arrived at the club in 1991.

In addition to the normal oxygen installation we added two portable bottles fixed solidly in the back seat which gave us about 1500 litres of oxygen. A Becker transponder fed by an independent battery was installed at the beginning of 1992, we had a GPS Pronav 100, on the rear instrument panel, and a portable VHF with VOR reception. We knew the cold would be a serious problem and it was necessary to line the cockpit with insulating material.

Clothing

Our clothing consisted of padded anoraks and trousers, silk gloves and muffs lined with down and padded slippers and fur lined boots in which we added electrically heated soles. We also carried chemical warmers that produce heat for about one hour and these were very useful.

Navigation

For France we used 1:500000 maps and the radio nav map 1:1000000. For Spain we used the 1:1000000 aeromap. In a special file we had the **Jeppesen Airport Directory** on which we noted all the radio frequencies, etc.

The GPS was of considerable help. We had entered into its memory the positions of all the airports on our route, so that at any moment we were able to pick out the most useful diversion, should that be necessary. This considerably in-

FROM VINON TO FEZ

This is an account of a 1420km two-seater world record flight from Vinon in France to Fez in Morocco on April 17 in an ASH-25



Gerard (on the left) with Jean-Noel Herbaud.

creased the safety of the flight and enabled us to concentrate on the soaring problems.

We had previously made several wave flights which had enabled us to measure exactly our oxygen consumption, and to improve our protection against the cold.

Thursday, April 16, the day before the flight, we prepared the sailplane, oxygen, insulation, altimeter in feet set at 1013mb, flight-plan, declaration, camera, barograph, etc.

The Flight

0520 – Arrival at Vinon and tow out to the runway in the light from car headlights.

Michel Batterel, Editor of *Aviasport* writes:-

Towards the end of the 1950s Issoire was a popular place for wave; at a relatively short distance from Paris and the north of France, every winter brought a number of pilots to try for their Diamond height, advised and directed by the CFI, Pierre Herbaud. Mixing freely with the visitors were two young boys about 12 years-old known by the nicknames "la Vapeur" and "la Buee". Gerard and Jean-Noel Herbaud were soon bitten by the same bug. Since then they have become gliding instructors, professional pilots and now both commercial airline pilots, one on an Airbus A320 for Air Inter, the other on a Falcon 100 for a private company based at St Etienne. But they have not lost their enthusiasm for soaring – in particular mountain flying, nor their ambition to make an outstanding flight. They have been preparing this distance record for twenty years. Here is their own story of the flight.

0600 – Bernard Thuault, CFI, taxies out with the Robin. The windsock hangs down sadly, like our morale. At first light we think we can see a rotor cloud in the direction of the Mont Ventoux and our spirits revive. It is -3°C on the ground and our friends are working hard to remove the layer of ice which has formed on the wings.

0700 – Take off. The wind on the ground is still calm. Direction: the Luberon; normal climb, no turbulence. Bernard searches for lift in the proximity of the lake called La Bonde. Nothing very significant.

0710 – Release at 1800m QNH 1km from the lake. Steady lift at 2.5m/s to 1950m then sink, repeat several times.

0805 – Photo of the lake for the departure.

0815 – We succeed at last in climbing to 3000m

The key to the world record flight photographed by William Malpas on April 17. On the left, lenticulars over the Pyrenees seen from Perpignan. On the right, the road from Perpignan to Cerdagne with lenticulars and rotors as far as the eye can see.



We are grateful to *Aviasport* and the Editor, Michel Batterel, for giving us permission to reprint this article, plus the loan of the artwork, and to William Malpas on a speedy and excellent translation.

which permits moving towards the Vaucluse. Contact with Salon and confirmation that our transponder is OK.

0910 – 3800m, transition towards Nyons and Rochecourbe.

1045 – 5000m, across the Rhone Valley towards Mont Lozere, at last we are moving in the direction of Fez!. Now the clouds are marking the route and we arrive rapidly at St Chinian in company with Alain Poulet in the Nimbus 3b from St Auban.

1145 – 5300m limited by 8/8 altocumulus. Transition to La Llagonne where the valley is covered in snow.

1220 – Still limited to 5300m by the cloud cover. We discuss the possibility of returning to Vinon but the chance of succeeding is now very uncertain.

1230 – Arriving south of Puigmal (close to the airfield at Cerdagne) the visibility is superb. We pass south of Seo de Urgel heading west in order to be in a better position to cross Spain. We transform the lift into increased airspeed.

1320 – FL235; we set off on a heading of 225 in the direction of Teruel. The GPS indicates a ground speed of 326km/h. Soon we see a wave cloud in the lee of the Cerro de Penarroya.

1415 – 4000m; climbing again along the leading edge of the lenticular. The spectacle is magnificent; we feel like two surfers on the Hawaiian rollers.

Oxygen? No problem. But the cold! Not only our feet, but the instruments in the front panel, also frozen, now pack up entirely. All the liquid crystals look very sad. At 6200m and about 70km NE of Albacete we set off again southwards using several little waves and maintaining altitudes between 5000 and 5500m. More waves on track and we can see the snow covered slopes of the Sierra Nevada.

1730 – Approaching the summit of the Sierra Nevada we pass into the corner of the zone R63 but, by chance, activity finished by 1730.

We pass over the summit at 4200m and the vario which still works goes off the scale down. Good sign! About 6km further and we are climbing rapidly and the dream which we have cherished for 20 years is at last coming true.

At 4500m the Moroccan coast is visible. The cold is forgotten, tiredness seems to disappear and our happiness is intense...

The GPS indicates 200km to Al Hoceima and 365km to Fez. It may not seem much but we have 200km of Mediterranean to cross.

1840 – At 7600m (FL245) we head for Al Hoceima, ground speed 240km/h. Our altimeters are both frozen up; we adopt a higher speed taking into account the margin of safety that we now have at this altitude.

The small VHF radio, which has been kept warm inside an anorak, seems to be still working. We call Casablanca before entering the FIR; no reply. However, the tower at Al Hoceima is able to receive our message. We explain our in-



tentions to the air traffic controller, but he seems to be a bit worried. We also have contact with an aircraft of the Royal Moroccan Airways who helps us with our communications with Casablanca.

The battery of our GPS is now completely discharged, so we must calculate our final glide into Fez by hand.

1935 – At 4500m we cross the coast and the runway at Al Hoceima is very tempting, but we maintain our heading towards Fez.

We start receiving the VOR and, following rapid calculations on the distance to Fez, the time of sunset, and final glide, we should be able to arrive without problems. The vario VP3, which the warmer Moroccan air is reviving, starts to work again. We build in several safety factors: 500m safety altitude, glider performance degraded, tailwind underestimated.

The countryside is magnificent; we cross the RIF quickly and we can see the snow-covered slopes of the Atlas to the south-east. Another dream for another time! Contacting the tower at Fez we estimate our time of arrival at 1836 UTC.

About 30km before Fez we find steady 2m/s lift; this makes us think of the preparation for our next flight. For a brief moment we imagine climbing again to 6000m and after a photo of the airport at Fez continuing south to break the free-distance record. It should be possible to arrive at Ifrane 50km south of Fez, but we would have administrative problems landing at an airport without customs facilities.

2030 – At 2500m we arrive over the airport at Fez. We take two photos of the airport and land on runway 10.

2036 – (French time). We land in the middle of the runway opposite the first taxiway leading to the parking. The flight has lasted 13hrs 36min.

Conclusions and Perspectives

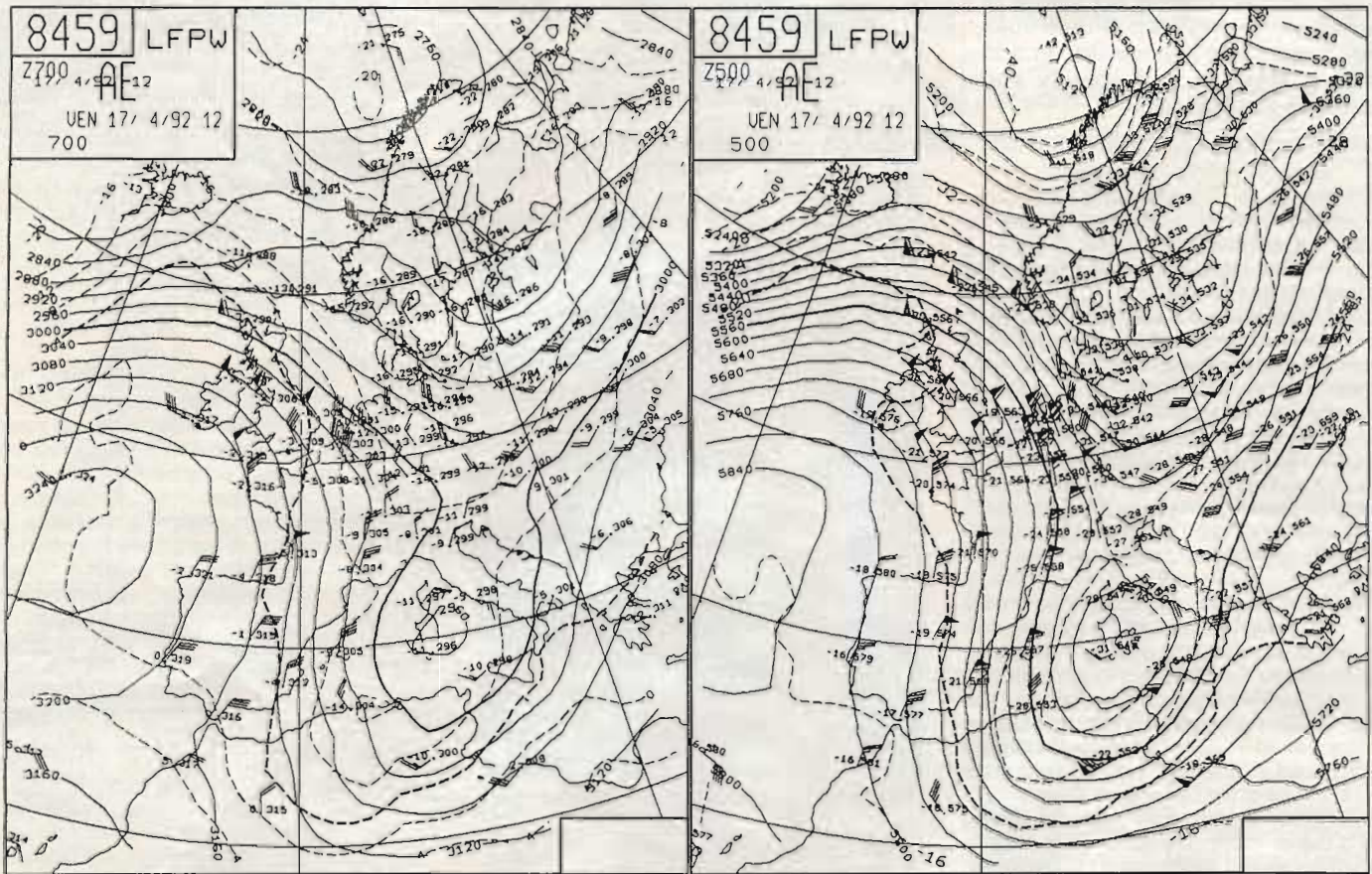
We believe that each year there are several exceptional days when such a flight can be made. It is certainly possible to improve our record on this route. We ourselves were tempted to continue further south. The most difficult problems are associated with the intense cold and it is necessary to prepare for flights of 10hrs at high altitude. This is much more difficult than a climb in wave followed by a descent.

Without the problems met at the outset of the flight (more than 1¼hrs local to Vinon) the conditions on April 17, 1992 would have permitted a flight of up to 1600km. It would still be necessary to find a customs airport at the end of the journey. Marrakesh is even further, but someone will do it one day.

Few people believed in the success of our project, so our preparations were largely kept in the family. With good technical and administrative support and perhaps a sponsor, we are ready to go again for a longer flight and we are not short of ideas.

For the moment our devoted crew (our wives) hope for several weeks of well-earned rest.

THE MET FOR APRIL 17 By Denise Cruette



The situation enabling Gerard and Jean-Noel Herbaud to succeed in their exploit is almost identical to that of December 7 and 8, 1969, which I had studied for my Ph.D thesis in 1973. At the time I had drawn my gliding friends' attention to the fact that such situations should permit flights from the Lyons region in France to Gibraltar. Thank you to the Herbaud brothers for having done even better.

The situation consists of the arrival of a cold airmass over the Mediterranean, which usually leads to the formation of a depression over the Mediterranean and an easterly airflow over south-eastern France. Therefore, an accurate Met forecast is necessary so that the start of the flight can be made when the winds over France, Spain and North Africa are still northerly, and before the winds turn easterly over the southern Alps. Thus, before anything else, congratulations to the Met forecasters at St Auban and Marseilles.

April 16 at midnight the situation at 700 and 500mb was marked by the presence over the Atlantic of a large ridge of high pressure with a north-south trough stretching from Scandinavia to Corsica. Within this trough over northern France and Holland there was a small area of cold air.

On the eastern face of the ridge, because of the large temperature difference between the relatively warm air associated with the ridge and the cold air to the east, there was a rapid north-westerly current over the British Isles, France

and northern Spain.

Because of the rapid movement of the cold airmass to the south, the north-westerly airflow became more generalised, extending to North Africa during April 17. Windspeeds increased rapidly with altitude: 60kt at 5500m and 75kt at 9200m, roughly corresponding with the route followed by the sailplane. The winds corresponded with the presence of a jetstream at these levels.

A depression at altitude

The Met chart for 500mb on the 16th at midday showed the appearance over the Central Massif of a depression at altitude over the exact area where at the same time the cold airmass was situated. With the passage of time the cold airmass and the depression at altitude moved together towards the south, so that they were over Corsica and Sardinia at midday on the 17th, then moved south-east towards Tunisia on the 18th.

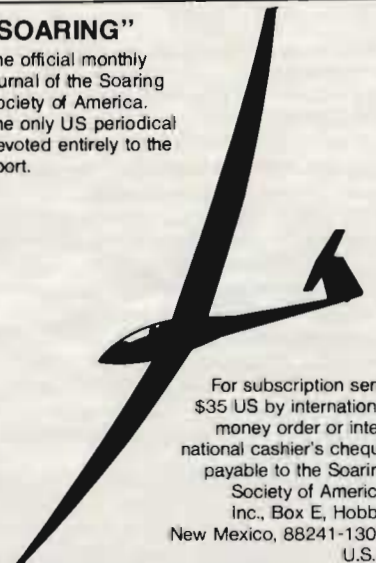
It should be noted that the presence of a jetstream is not necessary for the formation of spectacular wave systems. However, in the presence of a jetstream the wind direction does not change with altitude and therefore the waves tend to develop to very high altitudes.

The surface chart for the 17th shows a strong anticyclone slow moving over Great Britain and a ridge extending WSW-ENE from Brittany to northern Europe. Along the northern face of this anticyclone passed the fronts associated with a depression near Iceland. Between the anticy-

clone over the Atlantic and a large zone of high pressure extending from the Mediterranean to the Ukraine there is a waving front that was almost stationary; at midday on the 17th the top of one of these waves was over northern Italy. ✕

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The first three pictures show loading the original photographs on to the scanner. The fourth is manipulating the image on the Mamba.

You may have guessed it already, the photograph you see on the cover is not for real. Like an increasing amount of images used for editorial, design and advertising the images have been manipulated, in this case with the purpose of creating an image which would prove impossible to create in reality but at the same time making it look as though it really happened.

So I started with a sunset shot taken in France and thought well if there were a glider in the picture it would be a really nice shot. So next, when the light was similar to the sunset I took a shot of my own glider on the ground at Dunstable from the desired angle.

**Asked Crosfield _____
for their help _____**

Having flown some of the staff of Crosfield Electronics on AEI evenings (they like gliding) and read about the Crosfield Mamba in various visual magazines I approached them with the idea of helping put together my idea.

Karen Street and John Davies explained the system. First the images are scanned, *ie* converted into electronic data and this data stored

THE STORY OF OUR COVER

TONY HUTCHINGS

Tony Hutchings explains combining photography with electronic manipulation

on a powerful computer is brought on to a large monitor for manipulation. A pressure pen is then used in a similar way to a mouse and has a variety of different functions for different illustration effects. The system is powerful enough that the size of the pixels are actually smaller than the grain of the film, so once the image manipulation is complete the output is direct to a transparency recording device which yields an image of identical quality to the originals.

The creative possibilities offered by the system appear limitless. Images can be montaged, distorted, rotated, cut-out, merged, blended, blurred, airbrushed, colour swapped, retouched,

extended etc, etc. So, for instance if you wanted to see what your new clubhouse would look like with an extra floor, an extension widthways, a blue velvet finish to the walls and a 60ft banana as a windsock you could and it would appear real. Just the job for getting the planning application through.

There are three companies in London currently operating the Mamba system and the outfit costs around £½ million. Personally I'd go for a fleet of gliders.

My thanks to Karen and John at Crosfield. For further information about the Mamba contact Geoff Halsey on 0442-230000.

Original sunset.



Original glider.



The cover before being trimmed.



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TAIL FEATHERS

We have ways of making you safe

A powerful statistical argument was advanced in a recent *S&G*: of those light aircraft pilots that attended safety briefings the percentage subsequently killed in accidents was much smaller than for the non-attenders. This looks like solid proof that safety briefings bring about much safer flying behaviour in those that attend them; hearts and minds are changed massively for the better, and lives saved. I hope so, because I attend such gatherings religiously (you might call them survivalist meetings rather than



Survivalist meetings.

revivalist meetings) and beat my breast and do repent abjectly with a spot of self-flagellation thrown in'. However an alternative way to explain this high correlation between exposure to the Word and personal salvation is that the audiences were voluntary. The Believers go to the services in their Sunday best, clutching their Bibles; while we suspect the most endangered species amongst amateur pilots are the hooligans (by which I mean doctors and lawyers) whose attitude to being told anything for their own good is one of scorn. They have spent their careers telling other people what's what; nobody tells them anything.

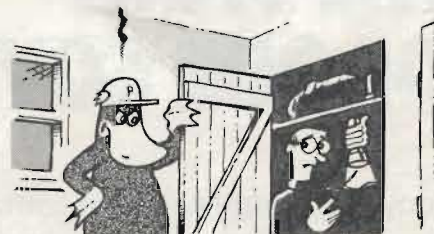
On reading the *S&G* report I said to someone that the only way to test the effect of such presentations was to ensure that those naughty pilots were exposed to the message without the option; the statistically very misleading element of voluntary attendance must be removed. Self-selection, as any researcher will remind you, leads to unacceptable bias in the results.

Someone else clearly thought the same way, or they overheard me: there is now a notice in our club announcing that a briefing on safety, which contains some excellent material that I saw on the day of the BGA Annual General Meeting, is taking place at a specific hour next week and stating that it is (very large letters) **COMPULSORY**.

¹ I was the only one out of about 100 who at Bill Scull's customarily professional presentation publicly confessed to having spun inadvertently in the past year. You mean none of the others even did a momentary incipient at 50 degrees of bank in a tight, rough thermal at 5000ft? I stand amazed, but respectful.

Not scientific

However, even if you get 100% attendance, the true statistician would say that scientific method



Sneaking a look at books.

has not been applied to evaluating the efficacy of safety lectures unless you had a Control Group: This group would be a random cross-section of all pilots, a balanced mixture of the devout and the hooligans, who would have to be forcibly prevented from attending any such briefings with as many whips and scorpions as the other group would driven in through the doors. You then carefully monitor the subsequent crashery of both groups. There would be the problem of some of the control group sneaking a look at books and articles on safety and thus undermining the purity of the experiment. A bigger problem would be that of the next of kin (chiefly of departed hooligans) suing the PFA or the BGA because their boy had been prevented from hearing the words that would have saved him. Rubbish, of course, but in court against one of the deceased's fellow lawyers, and the deceased's uncle probably wearing the judge's wig, what chance would you have?

The only place where such scientific experiments could have been carried out (perhaps they were carried out) with impunity would have been in totalitarian states, where individuals did what they were told and their families did not rock the boat. Now they're gone, for the moment anyway, and the mad scientists amongst us are frustrated. That's the trouble with democracy, it's so untidy.

Forget 1984, what about 1994?

Just as the tyrannies of Eastern Europe collapse, a new tyranny replaces them over in the West. No, I am not referring to the use of the word



Simple words are becoming taboo.

Compulsory for gliding safety meetings, out of place though it is in a free sport. I refer to PC, or Political Correctness, in the written and spoken word, which started in the USA and is spreading here. Simple words are becoming taboo, and ridiculous circumlocutions are substituted. Thus *fat* is prohibited; *alternative body image* is recommended, do you believe. If you said "That fat old girl is dead drunk" about the only word not calculated to set the Orwellian thought-police screaming after you is *is*. The fact that the sentence was true in every detail would only exacerbate the crime.

Now some officious woman in England has pronounced that we shouldn't use expressions like "I am *handicapped* by not having a word processor" because it somehow demeans disabled people. What that dumb broad (might as well be hanged for a sheep as a lamb) does not know was that the word *handicap* is, and has been for at least three hundred years, a sporting term.

The Oxford English Dictionary says it derives from *hand-in-the cap*, to do with forfeit-money being deposited in a cap when wagers were being made. It then came to refer to a way of levelling the odds between competing horses. So we do not have to abandon this term to satisfy the busybodies. I imagine that this lady (can't say *lady* any more: that's offensively patronising. Ed.) er, this person would have a great time with the gliding term *windicapping* – she would no doubt intone that it cruelly mocked those suffering from chronically flatulent bowels (no thanks, Peter, we won't require a cartoon for that bit).

Close encounters of the bucolic kind



Countryfolk at close quarters.

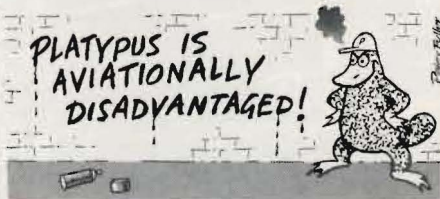
Of course this Political Correctness lark may still spread to our sport, the PC-ists' total lack of any sense of humour rendering them immune to ridicule. In a couple of years' time we will find that it will simply not do to suggest that any pilot or glider is inferior to any other. Consequently competition reports in *S&G* will become even more unreadable by those who were not there. Slow pilots will tactfully be described as having *taken the scenic route*. Pilots who get sunk will be said to have *returned to nature* or expressed their intense interest in farming by *meeting the peasants* (No! Ed) sorry, *countryfolk at close quarters*. Pilots who get lost will get the JayJay

Pewter Pot for *creative navigation*. Pilots who crash will get a European Community Medal for giving employment to the craftsmen of Membury or Poppenhausen, depending on the severity of the prang. Everyone will be a winner. The National Ladder will be laid out horizontally so that I can't be at the bottom of it any more.

They're here now!

It has just occurred to me that we already have elements of PC in the movement. After all, what do we call those little runts that one sees mingling with the agricultural community on difficult days? *Racing Class* gliders. Slow old gliders, and their slow old pilots, are called *Vintage*. Most euphemistically of all, Dunstable is described in some manuals as an *airfield*. If that's an airfield I'm a pilot.

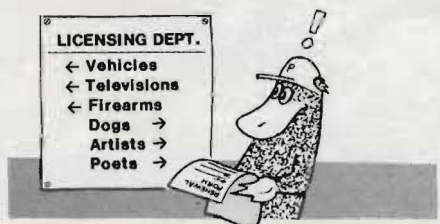
One advantage of the imposition of Politically Correct speech in 1994 will be that nobody will be allowed to say just what kind of pilot I am.



Should Platypus get his poetic licence renewed?

My introduction to the Dick Johnson Classic (see the April issue, p86) provoked a letter of remonstrance from Peter Rivers, active at Dunstable up till 1956, who felt that in order to dramatise the impact of Dick Johnson's 1951 world distance record I painted far too bleak a picture of British cross-country gliding in the early post-war years. Certainly there were more than ten, maybe as many as 20, pilots that had done more than 500 miles total in the UK by 1951. Peter's statistics, when fully compiled, will make good reading for anyone interested in gliding history.

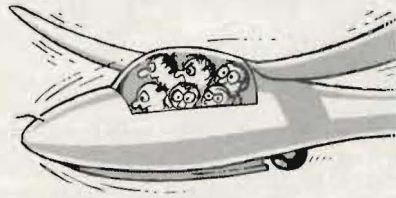
One benefit from Peter's rebuke to me was to make me read *Gliding* (S&G's predecessor as



Poetic licence.

official organ of the BGA) for 1951, which caused me to come across the account of Philip Wills's O/R record, thereby solving the problem of what to choose for my next Classic. (See S&G Classic this issue.)

However my contention that by today's spoiled standards those were grim austerity years is borne out by the account, in another issue of *Gliding*, of the 1951 UK Nationals. Only ten pilots had enough money to afford to fly a glider on their own: all the rest had to share gliders. How many team efforts do we see nowa-



Had to share gliders.

days, even in Regionals? In terms of sheer hardware, at any rate, we are far, far better off. But then the days when we were young always are the best, or so says the perceived wisdom.

The joy of scraping

The other day, during the May 1992 "high", I completed an epic struggle in the blue. Against the advice of JJ I declared a 266km task into East Anglia. "It's useless east of the M1" he avers as a general rule of thumb². (Now he has a GPS he can find the M1 without too much difficulty.) But the CFI had said it would be too stable in the midlands and west. Anyhow I got down to 800ft twice, 600ft twice and 350ft once – the last admittedly on the approach to the Cambridge Club's magnificent field at Gransden Lodge. Whether sea breeze from the Thames Estuary was to blame, or total ineptitude on my part, or a subtle mix, is moot. Anyway it was certainly a memorable flight to go into the Dunstable cross-country Blue Book, or the Great Book of Lies, as I call it (and I ought to know since I write a lot of it myself).

JJ said all that proved was 1) he was right about going eastwards and 2) it showed how pointless it would be for somebody like me to have an engine aboard: the moment I'd got below 1000ft I would have had to deploy the motor and what adventure would there have been to write up in the Great Book of Lies? How true.

²Madame Editor, expect a storm of protest from the Fens, not to mention Essex Man and Essex Woman. The fact that every day one can hear Alfie Warming whizzing round tasks in Norfolk shows that there is lift over the flatlands. One worry about East Anglia in the high season used to be the difficulty of finding a field that was not full of high crop. However the Common Agricultural Policy of the Blessed EC has resulted in there being lots of large, beautifully harrowed fields with not a blade of green, which farmers are paid to keep barren. It's called "set-aside." So instead of grain mountains we have safe havens for gormless glider pilots. God (*ie* Brussels) moves in a mysterious way . . .

AN UNUSUAL FLIGHT

A lesson to be learned

On a blue cloudless day in late November 1988, not many months after my first solo, I DI'd a K-8 at Lasham, checked all the instruments and manhandled it on to the field and hooked up to the tug. At this point I noticed one solitary cloud street and it started at the clubhouse.

My pulse began to race at the prospect of a soaring flight. The tug pilot took off at a cracking pace and headed for the cloud street, but no sooner had he got under it than he started to turn away.

This wasn't good enough so at 2000ft I released and turned back under the cloud and it was working. I quickly gained 300ft as I made steady progress away from the club.

After flying for about 12 minutes during which I hadn't looked at either the ground or the airfield, having only eyes for the clouds, I saw to my horror that the club seemed a long way away and at entirely the wrong angle. In fact if my altimeter had not told me the height was 2300ft I would have thought I was low.

A tap showed it was not stuck and it reacted to change in height. My DI had included zeroing it so it must have been all right but just as a precaution I decided it would be prudent to return. It was odd how clearly I could see the trees and farms.

Fortunately the street was still working to some extent though 600ft was lost by the end of it which left a blue gap to be crossed. I was now down to 1700ft but seemed to have no more than circuit height. A quick dash across the gap brought the K-8 into circuit which it was necessary to truncate and I even lowered the nose to be sure of clearing the boundary trees. Well over I went with just enough height to turn finals and land in front of the clubhouse.

The calculating half of my brain was still confusedly protesting "this is ridiculous, you can't land at 1000ft". Fortunately the artistic part took no notice and made a perfect landing as if this was what had been planned from the start.

Both parts were still shaking when Lasham's kindly CFI had a few friendly words to say. I didn't dare confess my foolish error of zeroing only the big hand during the DI and worse still believing it despite the evidence of my eyes to the contrary. After that I understood what was meant by "Don't trust you altimeter, eyeball it."

GET OFF MY LAND

This is the last of three articles to help pilots spot crops from the air. The first was printed in April, p92, with the second in the last issue, p150

By mid August (a little later in the frozen north!) rape and barley are mostly cut and wheat is about to be cut.

Tall crops still include beans, peas, wheat, potatoes and linseed. All of these will still be green in colour except the wheat.

Flax

Flax is no longer widely grown in the UK. It is similar to linseed but is grown for rope or linen while linseed is grown for its oil-bearing seeds. Irish pilots may, however, still notice flax fields. Both of these crops are identical in appearance.

Peas and beans

These crops (and indeed anything else that is grown but cannot be positively identified as grass) are still not landable. Peas are harvested at the end of August and beans a month later towards the end of September.

Stubble fires

The age-old practice of burning the straw residue left in golden yellow rows by combine

Below: Mid August. The deeper brown fields have been harvested and cultivated, exposing the soil.



What it's all about. The LS-4 down safely in a field of freshly cut winter barley. It's a shame about the soarable looking sky. The glider was aerotowed out – just!



Linseed.



Above: Peas in late August – waist high and tangled. Below: Beans in late August. Nowhere near ready to harvest.



START THEM YOUNG

David Broadhurst says he is a firm believer in the "grab them young" school of thinking and has found a way to encourage youngsters into gliding

I work at Lord Grey School, a Bletchley comprehensive for 12 to 18 year-olds, and at the end of each summer term the entire school abandons the timetable for a week and goes on "Activities". Activities can be anything the inventiveness of the staff and students can dream up,

harvesters (so called stubble fires) will be completely finished by August 31. Until then there will still be stubble fires but only on weekdays.

Stubble fires give super thermals but fill the sky with muck which blots out the sun and hence the natural thermals. Only 100km record racers will really miss them.

Below: Olney church TP viewed in early September. Note the cloud shadow distortion of colour and the number of fields "brown-side up." Photos by Mike.



The whole gang for Activities Week. David, wearing sunglasses, is by the cockpit and the two in white gliding hats are Dick Williams (left) and John Crewe, a fellow helper.

as long as it doesn't get into the seedier Sunday papers, and for five glorious days I take an assorted group of children gliding.

I am ably assisted by a colleague, Dick Williams – proud part owner of Peter Scott's Eagle at Aquila GC at Hinton in the Hedges

Sugar beet

This will still be a lightish green (like cabbages) until the end of September but won't be lifted until October, like potatoes.

Cultivation for the coming year

During August especially there will be many fields which become brown-side up (see photo). Mostly these will be smooth and comfortable to land on – especially if stubble remains visible.

However, some dark brown fields will have been greatly disturbed by the cultivation and close inspection is worthwhile before landing.

Deep striations are a reliable danger sign! ☒

where we are both members. We have offered this activity for the past three years and it is always over subscribed.

A group of 12 to 16 is about right as it doesn't get out of control, the boredom whilst waiting factor is reduced and Hinton's hard worked instructors don't get too harassed. The price has worked out in the range of £45 to £65 which covers flights, transport and insurance.

Last summer Aquila couldn't fit us in so we went to Brackley GC at Turweston where Albert Tarnow wheeled out the T-21. There was something of a stunned silence among the students – it wasn't quite the Top Gun image they had in mind. However, they very soon started to regard it with affection and had a happy week of flying, tractor driving and bringing Dad for a go.

Good character building stuff

It was at this time that the Great Idea occurred. Six were going to join the sixth form and were keen to continue gliding. I knew there would be time set aside for "enrichment and recreation". Suppose we could persuade the school, and also Albert, to let us offer gliding as part of that programme? It is good character building stuff and would be a wonderful achievement for them if they could go solo. Activities week once a year wouldn't do that for them.

The head and chairman of governors, an ex-RAF pilot, both saw the possibilities and so with Albert's co-operation and assistance we started a programme of gliding on the curriculum of Friday afternoons.

The students, three girls and four boys, flew with Albert at a reduced rate and I drove the winch. When the weather was bad I ran a ground school using notes I had written and desk top published at school. (And very professional they look. Ed.)

The scheme ran happily until this spring when Albert, with many commitments since his father's death, sold his interest in the Brackley Club. At this point Mike Cuming stepped in with his recently established Gliding Centre at Hinton. He is delighted to take on and extend the work we started with the post 16 students and also Activities Week. ☒

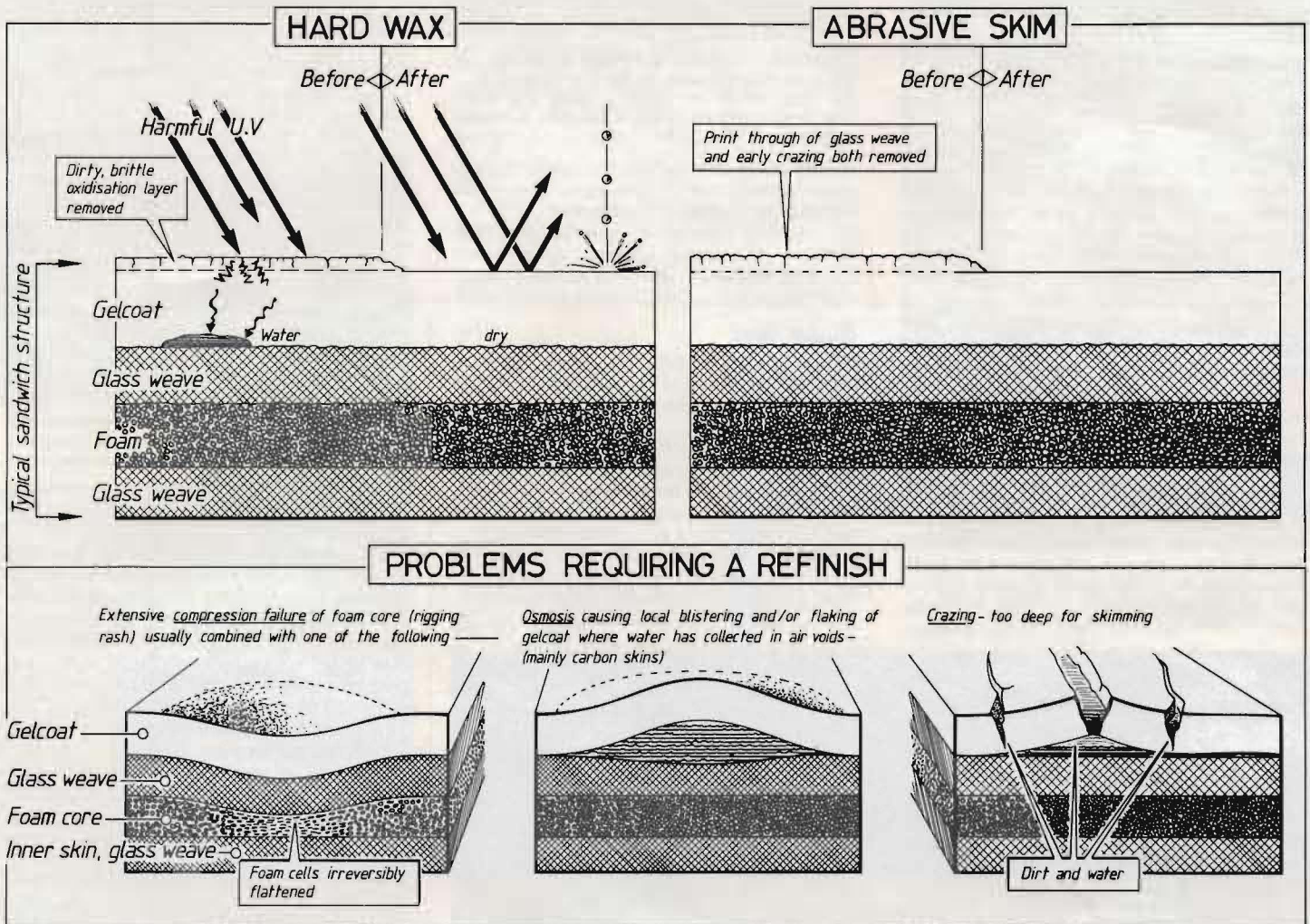


Having specialised in this field, I am convinced there is confusion on how best to look after the finish of glass-fibre gliders. Pilots don't appreciate the logic of spending as much as they did on the C of A protecting the most expensive consumable item of the glider. But it is the finish that protects the underlying fibre and resin matrix from such contaminants as water, solvents and ultraviolet light . . .

Finishing is expensive in time and materials and refinishing is at least twice the work for without the original mould the entire surface has to be re-sculptured by hand. But scant, if any, reference is paid to looking after your glider in the manual. And in an attempt to justify the cost there is the myth that this new technology needs little or no maintenance compared to wood or metal.

ARE YOU LOOKING AFTER YOUR GLIDER?

Gary McKirdy has a diploma in reinforced plastics and spent the last eight years working on glass and carbon aircraft structures including two years' research and development with three of America's largest composite kit plane projects



Here are some of the things you should do to protect your glider's gel coat or acrylic finish, so saving yourself a lot of unnecessary expense and all the more important than ever with the ozone hole and increased in UVs.

Hard waxing

Hard waxing will finely skim or compound the surface to remove the oxidation layer which has a dull chalky finish and readily collects dirt

like a matt finished paint. The oxidation layer is the brittle surface which can craze and from which crazing propagates. Regular hard waxing will compound any fine cracks before they become visible in exactly the same way that drilling a small hole in a canopy removes the stress point.

A moisture barrier helps to keep out water which causes osmosis blistering in winter and accelerates the oxidation process. Further-

more, the best clean-and-polish money can buy encourages reflection of the sun's rays instead of absorption which also contributes to oxidation, chalking and brittleness.

Hard waxing at least once a year is a must and in our moist climate is probably not enough, especially if the glider rarely comes out of its trailer. And if the trailer is glass-fibre it will also benefit from this process.

Don't be duped into judging a glider by the

amount of hours it hasn't done as this can be a handicap and not a blessing. Carbon gliders have a particular problem with moisture for two reasons: carbon is more hydroscopic and thus encourages moisture penetration, and when being layed up in the mould it is opaque, unlike glass-fibre, and makes small bubbles of trapped air between the gel coat and carbon impossible to detect. These then collect moisture and separate.

The moral is don't skimp on the hard waxing and don't be tempted to try and do it yourself without proper guidance since the rotational inertia in the applicator mop head can easily cause injury and/or damage to the glider. Hand polishing is no substitute for this process and water soluble fine compound wax polishes serve only to remove a proper hard wax base in the longer term.

An abrasive skim

Cured resin shows a shrinkage which is responsible for internal tensional stresses. This is also evident in the print-through of the glass or carbon cloth under the gel where resin rich areas between the weave shrink unabated by the fibres which resist the shrinkage, hence the uneven pattern. Any crack or scratch on the gel surface is encouraged to spread rapidly due to this internal shrinkage and should be dealt with immediately, even during the soaring season. An abrasive skim will remove shrinkage print-through and any visible crazing. Do this immediately you see any problem since cracking accelerates rapidly the deeper it goes and will soon mean a refinish, especially if encouraged by a heavy landing which imposes a greater bending load and tension to the top skin.

It makes sense to follow up the skim, which has keyed the surface, with an acrylic top coat. This effectively stops any further crazing, but only if all the cracks have been removed. Therefore the best possible time to do this is when the finish is brand new. The surface is then compounded with multiple hard waxing to remove fine scratches left by wet and dry abrasive paper.

A refinish

A refinish should be the last resort if neither treatments were in time to stop deep crazing. And crazing doesn't stop when it reaches the underlying structure but spreads sideways along the interface between the gel and glass, continuing to release the inherent internal stresses now that the whole depth of gel has failed. This accelerates and the curl up of the edges is a major cause of performance loss.

Although it is easy to break away flakes of gel, it isn't possible to peel away the entire surface which has to be removed with abrasives, preferably by hand. The new material is sprayed on and finer abrasives are used to block down the surface, again by hand.

Hard waxing finishes the process and a finish better than the original is achieved having hidden the structural skin shrinkage, the maturing having stopped for ever by the time a refinish is required. The only consolation for anyone with a glider in this condition is that the under surfaces usually outlast the upper ones by a factor of two or three to one and this may reduce the cost con-

MERRI'S PROGRESS

Task Week Fever



I've just had the opportunity to fly in a BGA task week. It was run by Chris Rollings and (conveniently for me) sited at Bicester. Although Chris's ultimate goal of sending us home with a new badge leg wasn't met, I'm sure that we each left at the end a better pilot, or with the foundations for improvement in place. If we didn't it wasn't through any lack of trying on Chris's part!

The weather was quite variable that week, with only the first being a proper cross-country day. The task, designed to evaluate the pilot's abilities, was accomplished admirably judging by the state of some of the retrieve cars the next day.

Chris spent the following morning's briefing dealing with thermalling techniques and pre (cross-country) flight preparation, as well as in-flight navigation. I won't dwell on Chris's suggestions for centring in thermals except to say that the method he advocated wasn't the speediest way of finding the centre, but the most reliable. What hit me like a bullet between the eyes was his advice that we sort out line features either side of track and use them as boundaries to keep us from getting lost. This comes into the category of "if I had only known": if I had only known to do this a while back, I probably wouldn't have wound up cringing with embarrassment in Boston! My husband thought this was only common sense, but that's what husbands are for.

The next really interesting bit was when we got wave over Bicester - maybe not of Aboyne

siderably. Also fuselage seams and leading edges craze early because of a more porous filler used underneath and these can be restored in isolation. A beautiful finish often makes a scratched canopy and tatty cockpit stand out and so ideally these should be restored to match at the same time.

Although this article may be topical in winter, anyone who still thinks finish maintenance is a seasonal issue has completely missed the point. ✶

standard, but the CFI did manage to get 8000ft out of it (that's what CFIs are for). The first I heard of the wave was when, hooked up for my tow, Chris radioed down that he was at 3000ft in 3kt. Towed up to join him, I was really enjoying myself trying to beat this wave which seemed to keep moving. I looked about for Chris only to find that he had disappeared, apparently pushing out on a foray to Enstone. I told him later I would have followed him had I known, but he said that I was better off having not - it had been quite "character building".

The next morning's briefing dealt with wave flying. The advice I found most relevant was... don't bother to beat blue wave, just head into wind and add a few knots. Hopefully this will save me a few relights in the future. We also discussed cloud flying and instrumentation, and getting from the thermal into wave (a technique which had always puzzled me).

The last day of the course brought the prospect of a downwind dash to Gransden Lodge (and return) for those in need of Silver distance. The wind was getting progressively more and more wound up, as was I. I really wasn't happy with committing myself to: a) an outlanding in the turbulence I felt sure I'd encounter, b) in a glider type in which I wasn't terribly current, and c) in a glider which had poorish roll control on the landing run. The "A" task, if it didn't end in tears, certainly looked likely to start that way for me.

As I was feeling a terrible wimp, I had a word with Chris who suggested the "B" task - an into wind push to Little Rissington and return. I felt a lot happier with that. He also said he respected my apprehension going cross-country on that day; he would be quite cautious and would only airfield hop himself with a Janus in those conditions. I felt a lot happier with that as well.

At the launch point we watched the windsock indicating gusts of 20kt: no cross-country after all I thought, well, here we are, and launched. The CFI, driving the tug, told me it was going to be rough, and just after we passed through the turbulence at 500ft commented about this. I was concentrating so hard on staying the right way up behind the tug I couldn't move my thumb to press to transmit!

His parting advice as he dropped me in lift was "Turn tight". 710 and I howled (three guesses as to who was howling) up to 4000ft in 4kt and watched the airfield flash past. Time to push into wind. It took me 2000ft to get back upwind, and I was soon ready to join the circuit. The approach was exciting; I flew it in +8 flap as landing flap is speed limited in the Janus, and we were coming down awfully fast. Great fun! And wonderful for building my confidence, which, for me, was what the task week was all about.

Chris's briefings also included an involved exercise designed to hammer home MacCready theory, and a lecture on the workings of variometers which led me to believe that 710 has a total energy leak. At £50 the week was very good value for money. Chris is an excellent instructor who can explain things well and doesn't mind answering questions. He doesn't pull his punches, though, but that's what a national coach is for! He also promised to fly with Izzy when she gets a bit older, and I intend to hold him to that. ✶

Behind my writing up these two flights at all is the hope that it may open up your eyes to the winter potential of Dunstable beyond that of bashing the circuit or beating up and down the hill. By a curious coincidence, only a day or two before these flights, while having a clear out, I came across an old 1979 issue of the club *Gazette* in which I had written an article on exactly the same theme. I cannot pretend it had too much impact but nothing daunted, as the bulk of the membership has changed since then, I will try again.

Flight No. 1, Monday February 3, 170km triangle, Wing, Grafham Water, Daventry mast, LGC, duration 3½hrs, P1 J.J., P2 Mike Thick.

This has not been one of our more memorable winters for LGC pilots with only a handful of soaring days jammed into several months of high pressure systems. True, apart from fog and frost, such systems more usually producing easterly component winds do throw up a few days with wave downwind of the hill and this winter was no exception. What little wave that did occur was not over exciting and I am ashamed to say that it did not have sufficient potential to tempt me out. But as January came to an end a developing high, with its centre well to the south of the British Isles, gave promise of a (less usual) north-westerly airflow of reasonable strength with what I assessed as a good chance of forming wave off the Welsh mountains and the Pennines.

As I was suffering from severe withdrawal symptoms brought on by no soaring for several months, I arrived at the club quite early, bright eyed and bushy-tailed, with the intention of getting a high tow by 1100hrs. Due to mud, the trailer getting stuck (it was the wrong way round) and sundry other minor problems it was just after 1300hrs before I launched in the ASH-25 with Mike Thick installed in the back. One other pilot had already towed to 3000ft without success, so I was beginning to wonder if I had taken leave of my senses when I asked the tug pilot to give us a high tow to Wing. We crossed the last small lump of cumuloform cloud just short of Wing airfield and bingo! We were in business with a weak but steady knot or two up.

At first the wave was a bit fickle calling for some unconventional wave flying manoeuvres, such as circling, S turning and the like, in order to keep in the rather localised bits of lift, but by the time we had got to the base of the Daventry CTA the wave had become easier to work and we were able to slide north-eastwards along quite well defined bars of cloud, gradually working our way into less restrictive and finally unrestricted airspace.

Conditions became more or less straightforward as we climbed higher until eventually we were belting along merrily at 80kt plus at between 7000 and 8000ft and still climbing at a couple of knots at times. Although the wave system extended well into East Anglia, we elected to turn Grafham Water (for reasons of time) before running back along the wave bars, doing a couple of forward jumps in the process. We had mutually decided to turn Daventry masts and though the run from the M1 to the masts is not very far, we appeared to have run off the end of the wave system (the visual wave bars also stopped) and into fairly strong sink. However, as

WAVING AU REVOIR TO DUNSTABLE

This is an account of two wave flights from Dunstable in the first week of February. Judged by the today's fashionable criteria of cross-country flying, ie distance against speed, neither will reach *The Guinness Book of Records*, but, says John Jeffries, in my book these are not the only criteria against which to measure the content and quality of soaring flights



JJ photographed in wave by Tony Hutchings.

Our thanks to Ken Maynard, editor of the London GC newsletter, for permission to reprint this article. There is a lot of excellent material in club newsletters which we very much like to reproduce and it would be helpful if S&G could go on your mailing lists. At the moment we see very few.

at 4500ft we had adequate height we pressed on round the turn. At this point I got cold feet because of the amount of sink we were getting, so scuttled back to a decaying wave bar over Northampton before topping up a little for a freezing cold downwind glide home.

Flight No. 2, Wednesday, February 5, 345km O/R, Bletchley, Black Mountains, LGC, duration 7½hrs, P1 J. J., P2 John Marshall.

After Monday's flight, the next day a weak nearly rainless front passed through which stopped play but even so there was a marked wave bar in the stratus beyond Leighton Buzzard in which an early bird could have flown. The WNW airstream was clearly going to persist so I phoned John Marshall in the evening who, without too much persuasion, agreed to alter his work schedule so that we could have an early start on the Wednesday. Dawn on Wednesday showed the odd tell-tale crack in the otherwise overcast sky so I put my winter woollies on and got to the club by 0830hrs. As I drove in I was met with an incredulous stare by a member (who shall remain nameless) who clearly thought I had lost my marbles as, apart from the suggestion of a crack in the overcast near the horizon, an unremitting sheet of dark grey stratified cloud hung over the world.

Holes in the cloud sheet had opened up but getting established in the wave was a bit tricky

Absolutely ready and tee-ed up to go by 0930 we had to wait for the tug until 1000hrs. As it happened this was perhaps fortuitous as the sky had gone completely 8/8ths with no cracks and I was contemplating a blind climb into the wave from below cloud, which is not the easiest of tasks at the best of times. Fortunately by the time we were hooked on a crack had opened up in the distance which I correctly assessed to be over Bletchley and to which Edward Downham in the tug towed us at speed under a 2500ft cloud sheet base. Although by the time we cast off the holes in the cloud sheet had opened up well, as on the previous flight getting established in the wave was a bit tricky. A game of patience ensued as the wave system was rather unstable with lift areas lying in different directions just to confuse things.

The overall pattern, such as it was, lay SW/NE but with little bits apparently lying straight N/S. As I could not seem to get above 4000ft, I decided to push on to a smallish hole (the cloud

amount was gradually increasing) over Wing. Here, as we did a bit better, I pushed on again to a hole at Little Horwood with another small gain and, after yet another push, climbed to the base of the Daventry CTA at Silverstone. The last three slots all had fairly distinct N/S orientation.

In front of us looking west was 8/8ths cover with fingers of cloud stretching from the edge of the cloud sheet and pointing to the NE some 20 or 30 miles to the north of us. Here came a short period of indecision. I had originally intended to try to fly north to get into the Pennine system but from the experience of the previous flight, was uncertain as to whether I would run off the wave system altogether in the blue. I elected not to chance it. Whether I was right or wrong I shall probably never know but wondering like this is one of the frustrations of gliding. Anyway, for better or worse, I decided to try to plug on westwards into the Welsh mountains expecting to be able to climb there and glide straight home.

But first we had to get there and that did not look too easy for beyond the rapidly filling Silverstone hole there was 8/8ths cover with no discernable holes and only very gentle undulations in the cloud sheet, and these were apparently running in the wrong direction up and down wind, *ie* west to east. Curious and unexplainable as this was, we jumped to the next vague trough, clipping the cloud top as we did so, and then followed the southern side of the trough at a very conservative (for the ASH-25) 50 to 60kt following a weak line of lift. The trough very gradually curved round until we were running roughly WSW. I could see a major depression in the cloud at the end of the trough with a little pile up of cloud behind it, so holding my breath – we were still quite low at 5000ft or less and only about 1000ft above the 8/8ths – carefully sidled towards it like a sleuth.

Slowly, ever so slowly, the depression got nearer until with a final flourish we crossed (just) the last bit of cloud to find ourselves in a basin with a small hole looking down on nothing in particular but a main road, green fields and a small village. It was at this point that the Trimble (satellite navigator to you) came into its own and we were able to identify our position as over the M40 near Northleach. We stopped and climbed rather slowly to 6000ft from where I got a better view of occasional lumps of cloud with a promise of holes in front of them, each joined with half-hearted and ill-defined shallow troughs in the cloud blanket. The undulations were even more difficult to make out from this, our new dizzy height, and in view of their direction, now lying WNW/ESE, totally impossible to fathom. Personally, though intrigued by such unexplainable phenomena, provided I can find lift I am happy to use it no matter from where it comes.

After a few more westward jumps, a few more holes and a gradually increasing and more comfortable operating height band, we worked our way forward with increasing confidence. Bigger holes, some slots, bigger cloud pile ups and a better defined wave pattern increased our feeling of well-being helped by positive visual fixes at Chedworth airfield, Gloucester and the Severn Estuary and Monmouth. Here we stopped and climbed to about 8000ft from which height it became fairly clear that the wave system was better developed to the north of us than to the west.

So we drifted along our wave bar and started jumping forwards towards a couple of really big cloud pile ups over the Black Mountains themselves. Time was creeping on and I kept looking at my watch assessing the moment to flee. The big cloud lumps over the mountains tempted me to push my luck a bit and they became an irresistible challenge, unkindly perhaps spurred on by hearing on the radio that the Talgarth pilots were merely wearing a groove in the hill lift in front of the mountain.

If the cloud in front failed to produce the goods we were certainly not going to make it back in daylight

I intended to do a quick climb to about 15 000ft in front of the first big cloud lumps and then turn tail for home and glide it out in one. Unfortunately nature is not always quite so obliging and having arrived at my target smack in the middle of the mountains and, because I had elected to cross at least two waves without stopping, at no great altitude, I found to my dismay that all it would give us was a miserable 2kt. I don't generally sniff at 2kt but it was 1530 and there was no way we were going to make it back with a 2kt climb with no certain or even probable prospect of getting the height necessary to glide out the 100 odd miles home. An even bigger lump of cloud in front of us behind the face of the mountain beckoned seductively, but if it failed to produce the goods like the one we had got we were certainly not going to make it back in daylight.

So with some misgivings we turned downwind and went on to one of the waves which had given us more joy before and which lay a few miles downwind of Hereford. Then began the nerve-racking climb with me looking at my watch every few dragging minutes. I reckoned that if we could get to 10 000ft by 1615hrs (in fact we got 9800ft) we were in with a shout, although you can never be sure what effect the lift/sink ratio will have on your glide performance in wave conditions (we still had 98 miles to go). What would be sufficient in normal non-wave conditions often is not with wave about, especially if you have to fly blind at any stage.

And so it proved. We milked off all we had time for on our last climb and as we glided downwind got little lift in the declining amplitude of the wave system, and in any case we had not time to stop in such weak lift as we did run across. Longish periods of strong sink were not compensated for by short periods of weak lift, so that by the time we reached the Severn again we were already below the required glide path and from there on, were faced with 8/8ths cover as far as the eye could see with little visible sign of any wave activity. However, even at our now inadequate height, the lowering sun threw pale shading into shallow troughs in the continuous cloud sheet with a roughly SW/NE orientation, a bit crosswind of our ideal track.

Very carefully, oh so very carefully, I followed the line of the undulations with the vario occasionally giving an encouraging bleep but mostly indicating less than normal sink. The net result was that from about the Cotswolds for the next 20 miles or so we only slowly sunk from about 6000 to 5000ft, finishing up somewhat off track, skimming along the crests of the nearly invisible undulations. I boldly (or foolishly) tried a jump or two to get back on track, the last effort nearly ending in tears when I became disorientated in the nearly non-existent lift pattern and had to turn 90° off track in an attempt to reach another trough.

Plunging through cloud, I said a little prayer and was duly rewarded after a few minutes in strongish sink by a burst of brightness as we charged out of the side of another trough with the variometer having a veritable orgasm. Pushed as we were for time with 29 miles to go and 30min to do it in, I could not resist a little fiddle up the side of the cloud to give us an extra 500ft or so. Of course, barring a disaster, we were home and dry but I knew very well that it would be as black as the ace of spades below cloud and I did not fancy arriving back on a marginal final glide, or worse, not arriving back at all.

It got gloomier and gloomier

We sank into the cloud on the Dunstable heading which John was calling out from the back (thanks to the Trimble). Then followed that always intensely exciting period as you sink seemingly rapidly and at an unreal forward speed through various shades of dark grey, wondering whether you will emerge where you calculate you should. It got gloomier and gloomier until myriads of lights appeared below, almost the only clue to which was earth and which was sky.

We were over Bicester close to our starboard, still 23 miles out with only 15min to go to official night. Although at a comfortable 3500ft, the lights of Leighton Buzzard, never mind Dunstable, looked an awful long way away. I took a rueful sideways look at Bicester, knowing I had to start piling on the coals as much as prudence would allow in order to beat the clock. A few radio calls to Dunstable on our fading handheld, the proper radio having gone on the blink, produced no response, so with a quick circuit of the field to check that all was clear were down with 1½ legal minutes to spare.

Footnote

Every now and then it is enjoyable to have a cross-country flight in classically good soaring conditions, but the memory of these tends to gradually fade away until all you are left with is the recollection that the weather was cracking. But have a flight like this wave flight – full of the unexpected and the unfathomable, with periods of nail-biting-non-breathing contrasting with interludes of tranquillity and stunning aesthetic beauty, of moments of anxiousness, excitement and intense concentration followed by blessed relief, the whole topped off with that euphoric sense of satisfaction and elation when you have finally cracked it – and you have a flight you will live and re-live, never to be forgotten. ✖

HOW TO GET A MOTOR GLIDER LICENCE

Or a little engine would be a bit useful

If you are a purist with lots of patience (for waiting in launch queues) and an ever faithful retrieve crew who hang on to your every "Getting a bit low near so and so" then don't bother to read the rest of this article. If, however, you are one of the ever increasing number of glider pilots who wonders whether a little engine would be a bit useful sometimes, then read on to find out how to get that little bit of paper from the CAA that allows you to fly a self-launching motor glider.

The CAA recognise two levels of glider pilot but in reality I would suggest there are four. First the experienced cross-country pilot, maybe with an instructor's rating, will find the course relatively straight forward. There are no minimum number of hours but you must do at least one hour of instrument flying appreciation and one hour of stall/spin awareness training, you must also pass the Navigation Flight test (NFT), the General Flight test (GFT) and the PPL(A) ground exams. You will also need a CAA approved medical certificate.

The instrument flying and stalling and spinning you should find straight forward (a stall with engine at full power can even be quite stimulating!). The navigation is good fun; dead reckoning (D/R) navigation using the compass and clock works surprisingly well. The problem we have with experienced glider pilots is that as soon as they see a TP they fly straight towards it and forget about the compass regardless of crosswind etc. . . . One might, of course, be wrong in identifying the TP and accurate D/R flying *will* get you to the correct one, even in bad visibility.

Diversions (part of the NFT) are much more like glider pilot navigation and experienced cross-country pilots find this bit easy. They are good map readers and do not tend to get lost; sorry, temporarily unsure of position. During your navigation training you will probably wish to learn to use the radio in a more formal manner than is the wont of your average glider pilot. You will be expected to be good enough to be able to transit the Brize zone and land at a licensed airfield. The biggest barrier here is a fear of making a fool of yourself; don't worry everyone does sooner or later!

The general flight test is a test of your ability to handle the aircraft and an assessment of airmanship. You will be expected to fly the aircraft accurately and to handle any emergency which the examiner can throw at you; engine fires, en-

Richard started gliding in 1972 and has 2000 gliding hours and 600hrs motor gliding. He was CFI of the Oxford GC from 1982 to 1990, holds a full motor glider instructor rating, has two Diamonds and owns a half share of a PIK 20e.

gine failure, stalling etc. . . the GFT takes about 1½hrs and you can expect to feel tired by the end of it. You may well even enjoy it! The examiner will expect you to be good enough for him to let his daughter (assuming he has one) fly with you. The whole course will probably involve about 10-15hrs flying time including the NFT and GFT.

The next stage of pilot is the bright and shiny brand new Silver badge pilot. It takes a little longer to train this pilot particularly in navigation and map reading – 15 to 20hrs is probably realistic.

The Bronze badge glider pilot must do at least 10hrs dual and 10hrs solo, 4hrs of which must be cross-country flying. Some of this will be done during the mandatory qualifying cross-country which involves landing at two licensed airfields, one of which must be at least 50nm away. He/she is also required to do an extra hour stall spin training. A total of 25-30hrs is a realistic estimate.

The pilot with less than a Bronze gets no concessions from the CAA. He is required to do the minimum of 40hrs. The gliding that he has done will be of great help and can reduce the time taken to get a licence appreciably compared to a complete beginner.

All pilots need to pass the PPL (A) ground exams. These are in similar format to the Bronze badge papers *ie* multiple choice box ticking in five subjects; aviation law, navigation, meteorology, aircraft technical and a new subject of human factors. The standard is possibly a little higher than the Bronze badge exams but good text books, complete with sample questions, are available.

Having an engine in your glider can certainly add an extra dimension to your gliding. If you use it purely as a launching device you will be missing a great deal. I can leave Enstone after lunch in my PIK 20e, spend the afternoon in the Welsh wave and be home in time for tea. I know it is cheating. Perhaps it *would* be more fun to take a £15.00 aerotow and do a 20min circuit in a pure glider but somehow I cannot convince myself. ✖

The last two years have been exciting for those of us involved at the sharp end of the Women in Gliding movement. It all started in early 1990 with the seed of an idea sown at a business meeting. From that initial idea grew a group of women pilots all wanting to do something for the cause of women's gliding and asking where and when we could get started. The energy and heat generated in the first few meetings could have kept a sizeable fleet of gliders aloft . . .

So what have we really been up to so far? Is it all a wicked feminist plot hatched by paranoid women looking for excuses for not being better pilots? Or have we found a way of tapping the brains and efforts of people who haven't had much to say in the past? Like most things, it's probably a bit of both.

The study with perhaps the greatest significance for the future was a questionnaire sent to as many women pilots as possible asking them about their flying training needs, their ambitions and the pattern of their flying experience. Liz Veysey, who analysed the returns, was overwhelmed with lengthy replies and comments. The majority pointed to a widespread feeling that the provision and methods of flying training could be changed or improved to benefit all pilots, but particularly women. Liz produced a comprehensive report and some recommendations which, I am delighted to say, received full support from the Executive Committee and from Dick Dixon, chairman of the BGA Instructors' Committee. Dick has already started to look at ways of implementing some of the ideas.

Technical issues which affect smaller and lighter pilots

The second major piece of work is a survey of safety and technical issues which particularly affect smaller and lighter pilots, principally ballast, cockpit size and ergonomics, cushions and straps. Leading this study were Elaine Carver and Joanna Murray, who reported on all the subjects investigated and made a number of proposals. Again we were very pleased when the Executive Committee accepted the report in full and agreed that it should be implemented. Meg Stark has joined the sub-group involved with the practical implementation of many of the ideas.

We also contacted the Sailplane Development Panel of OSTIV pointing out the shortcomings of glider design for the petite pilot and have been invited to send a representative to their next meeting in the autumn.

We will be carrying out some inquiries during this summer in preparation for that meeting, and would be glad to hear from anyone with strong views about the design of the gliders they fly. Please get in touch with Jo Murray via the BGA if you have any comments.

Anyone looking at their club surroundings and facilities with a reasonably objective eye will realise that they leave something to be desired. Even the larger and richer clubs come off a poor second when compared with other sports clubs and facilities in this country or with gliding clubs

THINGS FEMININE

Diana King, chairman of the Women in Gliding group, gives an update on her committee's work

in some other countries. Even taking into account the substantial government support which other countries have, "Could do better" could sum up the state of some of our club surroundings. Many of us are happy to rough it because we are so foolishly besotted with flying that nothing else matters much, but does it have to be that way? For many people, and particularly women, the lack of clean and simple facilities like loos and basic cooking areas is a real turn off.

Marilyn Hood, after many years' experience of facilities at different airfields, has written some suggestions for the type of club facilities which would encourage more women to stay with the sport, either as pilots or as partners to the pilots. Jeanette Burgoyne, whose job is in social work, has considered the options for childcare and made suggestions for how to provide some reasonable arrangements for young children. The idea is that if we can keep families and mums happy, it might keep the dads happy too and perhaps they'll all stay with gliding instead of going elsewhere. For those with no family ties this may be no big issue, but you only have to look around at the number of your friends who dropped out of flying when they started a family to realise that we might be going wrong somewhere. Both these reports will be included as appendices in the **Club Management Handbook**.

The last, and perhaps the most controversial, area of our research has been the medical and physiological study. For some reason this has roused feelings and tempers in people who are otherwise normally mild mannered - those of us interested in these problems have been accused of being hysterical or worse and all sorts of strange attacks have been made upon us. I

begin to wonder who it is who is hysterical! Let me explain very briefly what this is all about.

Many women, probably the majority, will have a child at some time in their lives and all of us go through the usual monthly cycle for some 30-40 years. Some people sail through these things with no more than slight inconvenience, whilst others suffer severely for no obvious reasons. For women in the second category, it is important to find a way of managing the situation and getting as much out of life as possible, and that includes flying. What we have aimed to do is to offer advice for people who need it and to encourage everyone to make the most of the opportunities available and not to use "women's problems" as an excuse for sitting around doing nothing. That's all.

On the flying front, we have organised some special women's flying weekends and hope to extend these this year and next, starting with a thermal soaring/cross-country weekend in September and a wave weekend in October. More details in *Slipstream*, our newsletter.

Finally, we have published *Slipstream* roughly four times each year, under the very professional editorship of Helen Evans. *Slipstream* brings news and opinions to women pilots who may otherwise feel isolated, particularly in the smaller clubs. If the size of the postbag is anything to go by, it is fulfilling some of its objectives admirably.

So - that's where we're up to. A lot of hard work done so far and a lot still to come. My thanks to all the members of the Women in Gliding group who have done so much already. We have also had enormous support from the main BGA Committees and from the BGA staff, without whom we could have done very little. Our thanks to all of them. ✪

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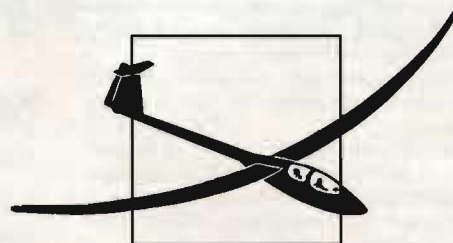
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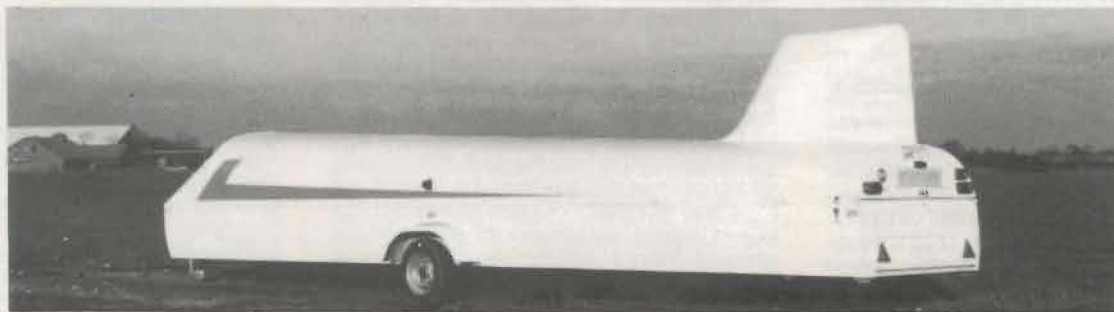


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Briefing on the first day (June 15) was around 0930. It was one of those glorious summer mornings with crystal clear skies, dew on the ground, not a breath of wind and millions of people rushing around with water containers and unfolded maps mumbling things like "500 today" and "Would you help me rig please?"

The Met man confirmed that even the village idiot could do his 300km and the task setter revealed a 611km hexagonal task on the back of the blackboard. The hall turned into total disarray as crews scammed to get gliders rigged, fettled, on the launching grid and full of water within half an hour whilst pilots were left trying to get this mammoth task on to a one half million map. Most of us didn't believe it possible but it did actually fit.

The TPs were Shaftesbury, Nympsfield, Llanfair Caerinion, Stratford on Avon and Husbands Bosworth.

The first launch was broadcast as 1130 and as such meant we would have to fly like men possessed to stand any chance of getting back. (Especially us lesser mortals flying the smaller gliders.)

By the time we did get going the day looked beautiful. It would seem it wasn't quite that good though because within 10min of releasing I was at 800ft about to join the circuit and land. This proved quite convenient because there were still 30min before the startline opened. However, due to finding what must have been the only weak thermal within 50 miles of Lasham to scratch around in, the time went quite quickly.

The first leg to Shaftesbury was textbook – 6kt thermals to the 4000ft cloudbase and lots of dolphin flying between them. It was pleasing to see that the Nimbus 3s were hardly gaining on us during this phase. Who needs span?! The second leg to Nympsfield, however, was slightly different.

It was becoming overcast ahead and we all had to slow down. Terry Joint and myself stayed fairly close and helped each other to the TP. The big spanned gliders had left us behind.

At Nympsfield the sky was totally overcast and the way ahead looked anything but promising. To add to the problems we were going into deep Wales with hills up to 3000ft and cloudbase at 3500 to 4000ft.

Surprisingly there were still thermals under the overcast but it was very slow going. I had lost all my electrics thanks to aged batteries and was just plodding along on my own. To be honest I was totally lost, finding it difficult to navigate when effectively all I was doing was remaining airborne whilst flying down valleys. I decided that Llanfair Caerinion was a ridiculous TP. Who in their right mind would choose such a small village in Wales?

Being lost just added to my frustration. Eventually I stumbled on the Long Mynd which helped tremendously. I had been airborne for 4hrs and has spent the last two somewhere in Wales. What a waste. Anyway the weather and my mood changed. The sky opened up again and off I set turning Llanfair Caerinion a little later.

I expected I was hours behind but I had turned the furthest TP so at least the longer I stayed up the shorter the retrieve. Stratford on Avon eventually appeared out of the gloom. This TP was

THAT WAS A DAY THAT WAS

Barrie Elliott recalls returning from his base at RAF Laarbruch in 1985 to fly a Ventus B in the Open Class Nationals at Lasham, having previously always competed in the 15 Metre Class



Barrie started gliding at six weeks! (his father was a glider pilot). He has been CFI of Bicester (RAFGSA Centre) since 1987, has all three Diamonds and a two-seater 750km diploma for a 753km in Bicester's Nimbus 30T on a training flight.

used to ensure we skirted round the bottom of the Birmingham zone.

It was now 6pm and I had been flying for 6hrs 15min. The cumulus were dying quickly which made it all the more difficult to find thermals. The good climb at Stratford looked like being my last when out of the blue I saw the glint of gliders turning about five miles ahead. As always this is a great boost to morale.

It meant if there was still usable lift when I got to their thermal I would at least be able to reach Husbands Bosworth. The two circling gliders left a few minutes before I reached the lift (typical!!) but I found it and climbed to 4000ft. It was easy now. All I had to do was set course, land at Hus Bos and await my crew.

As I was gliding into the TP I saw an Astir release from tow and start to turn. I was only at 1200ft and so I took the photograph and had a quick look at what he had. There was a very small amount of lift and also a gentle northerly wind blowing me slowly down the track of my last leg, so I stuck with it. As the Astir left the evening thermal to fly home the thermal strength increased.

A few minutes later a small wisp of cloud appeared and at 4000ft I mustered up all dregs of battery power I could and ran up the T & S. At 5000ft with the biggest grin you have ever seen on my face I started gliding towards Bicester. Good old John Willy said I could maybe just

make it but it would be marginal. At 46kt, which was min sink speed, I sat back and let the countryside slowly drift by.

As I got nearer to Bicester it became more apparent I didn't have the height to make it, so when I hit some more lift at Silverstone I took it to get whatever I could. It was then I was joined by Ken Hartley flying Bicester's Nimbus 3. You can imagine how I felt knowing that after all the hassle I was still up with the pundits flying far superior gliders. I left the thermal when I knew I could make Bicester safely and set course.

I arrived with 600ft and to waste height over flew the airfield and sampled the town. To my amazement I found I was in lift. Only a ½kt but lift. With past experience these thermals die on you at 1200ft but at 1500ft the thermal had increased to 2kt and it was 7.30pm. It must stop soon.

A few minutes later a grey wisp of cumulus formed above me at about 3500ft marking the possible top to the lift. It petered out at about 3000ft and off I set to Booker, arriving there at 2000ft. It was now just before 8pm and the sky was calm as could be.

I reached Reading at 1000ft but there was no way I could safely cross the town so I landed just to the north on a playing field in Sonning Common, along with Martin Durham who was flying in the Lasham Regionals.

So there it was – 8hrs 19min having flown 585km after taking off at 1145 to give me 5th for the day. There were no finishers and the leader, John Delafield, flew only 22km further than me in a Nimbus 3. Due to the nature of the task it was also possible under the new BGA ruling to claim Diamond distance.

That was a day that was!!

S & G CLASSIC

CHOSEN BY PLATYPUS

There are many attempts at fine writing in gliding magazines and gliding books which are frankly pretentious and clumsy, because the authors have decided that it is important to write in a much grander manner than the way they talk when amongst friends. By contrast Philip Wills was the most natural writer, in that his books and articles were like his conversation, which was effortlessly brilliant and lively. This piece was not chosen to represent Philip's especially great prose pictures, but is an illustration of his conversational way of describing to his friends a particularly satisfying flight. This flight was different from the stereotype we may have of him. Instead of the downwind improvisation, here is a planned O/R in a 1930s machine (rated today at 76 handicap, or half of today's Open Class machines).

Not much attention from the rulemakers

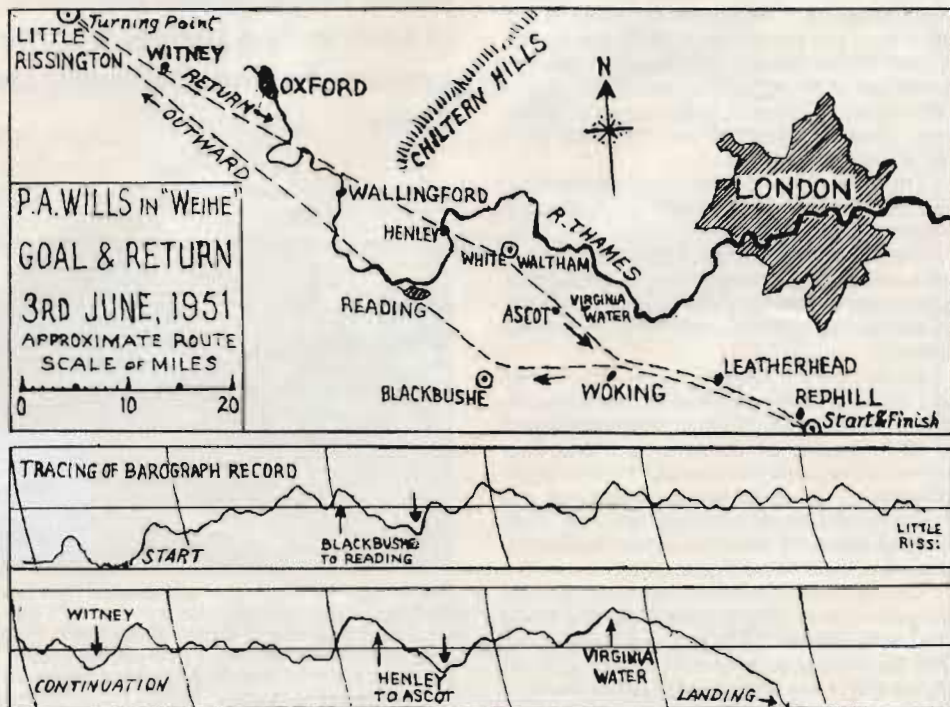
The first thought of a modern reader must be "why didn't they use photographic evidence for turning points in those days?" On one occasion Philip Wills hung around so long trying to attract the attention of the chap in the control tower at the chosen TP that he was compelled to land. Before the arrival of laminar flow gliders in the mid-1950s it seems that the lone closed-circuit task was so rare that the problem did not get much attention from the rulemakers – or were they waiting patiently for Kodak to invent the Instamatic camera?

Tony Deane-Drummond says that the use of cameras had become established before the spring of 1957. During Tony's first record in 1957 (see the last issue, p144), a 300km triangle, he held the camera in his hand and nearly lost a TP. Before the next record attempt he bent some aluminium into a camera-bracket and fixed it to the canopy frame. This solution was scorned by his fellow-Lashamites until the usefulness of the device became evident to all. In competitions, as distinct from lone attempts, the practice of dispatching observers by road to the TP with binoculars still prevailed till the mid-1960s.

The other reflection on Philip's 1951 flight was that one of the joys of cross-country flying was the absence of airspace problems. Any Weihe-owning vintage enthusiast who decided to replicate Philip Wills's Redhill-Rissington effort would now end up in the slammer for infringing the Gatwick CTR/SRZ, Heathrow CTR/SRZ and Brize Norton in a few brief hours of infamy.

From the July 1951 issue of *Gliding*, p54

GOAL AND RETURN RECORD



The goal and return flight has always been one of the most fascinating to attempt, but one's enthusiasm has always been damped by the possibility of failing to attract attention at the turning point, and so all one's efforts coming to nothing, because it is almost impossible for anyone to keep close watch on the sky for any length of time for a sailplane wheeling silently around overhead; and if one comes down low enough to be certain of attracting attention, it is all too possible to come down too low to be able to find lift to enable one to get away again. Which has all happened to me before, and spoils what might otherwise have proved to be the beginning of a lifelong friendship.

But the Wills system of "How to be Infallibly Spotted at Turning Points", described in No. 3 issue of *Gliding*, p130, seems to provide the answer; so for some time my map had been all marked out and plans made for an O/R flight from Redhill to Little Rissington and back, which, being 160 miles, was Enough.

Which was just as well, because when, at 0800hrs on June 3, the Met gave me at home near Maidenhead a forecast of *nil* wind and thermal activity to 6000ft starting at 1100hrs, the most feverish activity prevailed non-stop until I

finally left the ground at Redhill at 1140hrs having already missed over half-an-hour's promising looking sky. An extra half hour or more spent in planning the flight *de novo* would have killed it.

Which again underlines that in gliding one must always be ready for anything, with the accent on "ready"; and no one must laugh when, day after day, one takes off with the most pompous plans only to land back again at one's starting point, or worse, within a few minutes.

The day was windless and hazy, but, by the time I took off, the top of the brownish haze was dappled with whitish patches of flat cumulus, and at 1600ft over the airfield I released in lift varying from 3 to 5ft/sec. Along my course to the north-west the cumulus seemed to fade out, and I cursed myself for not having ready a second string in the shape of a planned O/R flight along the south coast, where on such a day one might expect a sea breeze effect. But events proved me wrong in my regrets, because various people who tried the coast route on this day came to nought.

Anyway, I had signed for Little Rissington and back, and my wife was briefed to phone them for a mark 2½hrs after I had got going. I released

at 1155hrs so Little Riss would be on the watch at 1430hrs. If I was late, my wife would phone again at half-hourly intervals.

By the time I reached Leatherhead the cumulus had got smaller and paler, and I found myself driven to the west of my course in pursuit of what became mere shadowy thickenings in the top of the haze layer. At length I found myself just north of Blackbushe airfield, clouds to the west, but unbroken haze on my course to the north. It was no goodfunking it any longer; if I was to get anywhere I had to assume there was dry thermal at least over towns, and as I was as near to Reading as I could get without cutting away from the cumulus area, I bit the bullet, climbed as high as I could (the lift never being better than 5ft/sec) and took a compass course through the haze for the ten odd miles to Reading.

I duly arrived over the town at 1600ft, and immediately found lift to 3500ft. I now saw that on the far side of the Chilterns, from about Wallingford on, cumulus was again visible. It was 1300hrs; I was about 30 miles on my way, with 1hr 20min gone since take-off, so I was running a little late.

With a shout of joy I turned for home

The lift never strengthened beyond 3 to 5ft/sec up to 3500-4000ft, which limited my cruising speed to 52mph and my average speed to around 25mph; but apart from this there was no difficulty at all, and Little Riss was below me by 1455hrs. I circled it once or twice, losing height as slowly as possible until my wife's second phone call should bring the duty pilot to life. By 1505hrs I was down to 2300ft (under 2000ft above the airfield) when a green Verey light streaked out of the upper window of the watch office, and with a shout of joy I turned for home. I found lift still on tap where I had last marked it before reaching my TP, but left it too soon, and had to make hurriedly for Witney and waste 20min in its thermal climbing from 1800ft back to 4000ft.

Now I made straight for home, but over Henley was again faced with the cloudless stable gap over this part of the Thames Valley which I had found on my way out. Fortified, however, by my previous success in crossing it, I climbed to 4800ft (the lift by now was going higher) and took a compass course, over White Waltham, till I ran into lift again in a cloudless sky near Ascot race-course.

I was now within 25 miles of home, so theoretically could make it from 5000ft, and as there was no sign of lift ahead I spent a long time trying to achieve this height, but stuck at 4600ft, finding in the meantime that there was a slight north-easterly drift at this height which might slightly reduce my gliding angle on the home course. So I had to set off and hope for one last thermal.

The towns seemed the safest bet, so I made for Woking. The lift I wanted, however, was found over a dry sandy common south of Virginia

QUEEN BESS SLEPT HERE!

A story of Booze, Bogs and a Bunkhouse – or high living at Booker

There's a malicious rumour spreading around gliding circles that Booker lacks even the most basic requirements of a gliding club, *ie* "The Three Bs" – Booze, Bogs and a Bunkhouse.

Being a Booker pilot and a Brakspears real ale man (more of that later . . . I hope!), together with a small group of members, I was moved to set about changing this situation.


The result is that Booker can now genuinely boast that Queen Elizabeth I really did sleep in our bunkhouse. In fact it is claimed she even ruled the country from there. Where are we talking about, surely not a nissen hut at the end of runway 07? No actually we are referring to Bisham Abbey – *The National Sports Centre*.

So the results of our efforts are that we can now offer Booker's own far more attractive version of "The Three Bs" – Booker, Bisham and Brakspears. The deal with Bisham Abbey is that all visiting pilots attending Booker courses and holidays may now stay at the 16th century Abbey, with private rooms, television lounge, use of the bar and all sports facilities, and with breakfast and dinner being served in the grand hall of the Old Abbey. And all at a very reasonable price too.

After dinner a short stroll over Marlow bridge should more than satiate the average glider pilots thirst for the first of "The three Bs" – Booze, with copious amounts of real ale on offer at every turning point. Oh and the deal with Brakspears . . . there isn't one! It's just that there happens to be about a hundred of their hostelries concentrated into the area immediately beneath our local soaring territory.

Water, and in it I climbed to the highest point of the day, 5400ft with 20 miles to go. The flight was in the bag.

Further lift was found over Woking, but hardly needed. I was down to 3000ft near Leatherhead before Redhill airfield became dimly visible on the horizon through the haze; I was quite shaken at the apparent hopelessness of going so far from so low an apparent height. But mathematics triumphed over emotion, and I reached it with 1500ft in hand. I landed at 1830hrs, after 6hrs 50min in the air.

There were one or two creaks from the Wills frame as I hobbled out of the cockpit, and for about a week I was the only specimen in captivity of a chairman of a London shipping house with a flat posterior. 

Recession

OK this is fine for Booker. We can now offer surely the most unique accommodation of any gliding club, but there are ideas here for other clubs as well. We concentrated our efforts on looking at what Booker needed to complement those areas where we felt we were already pretty good, *eg* soaring, training, two-seater fleet etc and we started to think of the whole surrounding area as a resource, rather than concentrating our thoughts just on Wycombe Air Park. It's surprising what facilities there may be close to your club.

In times of recession all businesses are looking to leverage their income. In our case we identified a sports centre with accommodation which is under-utilised mid-week. We will bring them customers, in return they offer us a very good rate and will promote us to their own club members.


In our case we feel that the Booker-Bisham initiative has given us an ideal package for the person seeking a gliding holiday, with the Thames Valley and all its attractions. The same must be true for other clubs in typical tourist locations like York and Scotland.

Marketing matters

Having created a new offering we are now setting about marketing it. Try to think laterally too. People looking for an activity holiday may not necessarily look in a gliding magazine, so we are also trying advertising in non flying magazines but with what we feel is the right readership. The results are yet to be seen.

Also as it involves a local sports centre of historical interest we are giving news-releases describing the arrangements to the local papers. Whilst to emphasise the holiday nature of what we are offering we have joined our local tourist board who promote Booker in local information centres.

Whilst the aim was to create an ideal gliding holiday, as a spin off we feel the arrangement may be of interest to pilots from other clubs wishing to explore new territories in their own glider, knowing that decent accommodation is lined up. If it is non-soarable there is always squash, the gym, golf or tennis . . .

So that takes care of two of "the Three Bs" – Booze and a Bunkhouse, but as for the other "B" – Bogs . . . well now what's wrong with Hiding-in-the-Hedges? 

It was about seven years ago at the German sailplane exhibition at Friedrichshafen beside Lake Constance in Southern Germany, that I first saw the front fuselage mock up of the S-10 self-launch sailplane. My comment at the time was that if Dr Stemme could muster the financial resources to develop his unique concept, marry it to a high technology wing and go on to produce a well engineered and quality controlled product, then he was undoubtedly on to a winner. I went home from that exhibition and opened my file entitled "Utopia". What I had seen had the potential to enable me to realise my retirement dream.

I started my gliding in 1959 at the Windrushers GC at Bicester – now of course the RAFGSA Centre. I immediately became a total addict and have remained so ever since. When I left the Air Force in 1974 to join Cathay Pacific Airways, it rapidly became apparent that the only way to continue soaring in Hong Kong would be with a self-launch sailplane. The PIK 20E thus became my first SLMG and it was a quite unique experience flying out of Kai Tak, where almost every aircraft was a widebody!

I flew SLMGs in Hong Kong for 12 years and over 2400hrs and during that time soared all over Europe, the length of Japan, from Sydney to Perth across Australia and from San Diego to Vancouver and back, and competed in the World Gliding Championships. I think most soaring pilots quite regularly experience moments of high exhilaration and wonderment in the air. Some regale over a beer or two, others write about it, whilst some misguided souls try to share it all on the radio! Now, with my retirement dream sailplane all those delights are mutually shared as it actually all happens.

I collected my Stemme No. 30 from Berlin in mid December. The hard part, that of paying for it, was done at the factory followed by a lengthy drive to Strasberg Airfield through east Berlin. Conversion flying was followed by an evening of self tuition on the GPS navigation box before departure the following morning.

RETIREMENT WITHIN UTOPIA

Tug Willson has left his airline pilot days in Hong Kong to settle in Spain with a Stemme S-10

The weather forecast was for improving conditions as I travelled south to Friedrichshafen. Unfortunately this was horribly wrong and I finished up landing at the nearest suitable airfield whilst still in the eastern part of Germany. This was Brand Airfield which sadly for me was the top Soviet base! It was Saturday afternoon and the place looked deserted from the air. I landed and parked on a very large pan. Before I could get out a three ton truck arrived and out jumped about a dozen soldiers, all brandishing automatic rifles. They responded to a shout and immediately encircled me with guns pointed!

Whatever happened to Glasnost was my thought as I was bundled into the back of the truck, still surrounded by those nasty pointed muzzles. I could truly write a book on the events of the following two days but that must wait awhile. Suffice for now to say that everything ended so well that the commandant has plans to come on a soaring holiday to Spain.

Once I did get on my way I had a most enjoyable three day ferry via southern Germany, the Rhone Valley, South of France and on down the Spanish east coast.

I now have four months' flying on the Stemme in Spain. The soaring time is 212hrs with under 11hrs engine time. To date I have been 14 times

to 15000ft in wave, flown six 500km O/Rs and one 750km triangle, and it is still only mid April! Now all those moments of soaring bliss are shared in the superb performance of the 23 metres. Whilst the side-by-side seating will not offer any possibility of qualification for the one, three or five mile club, it is infinitely more sociable for the retired who have probably forgotten how to qualify anyhow!

Utopia has to be Spain in a superb soaring two-seater.

Footnote: On June 10 Tug flew 1012km at an average speed of 148.8km/h, split into two 500km O/Rs from Quesada, near Alicante, to the north towards Madrid and then south beyond Granada. The first 500 was at 120km/h and the second averaged 196.4km/h giving an average speed for the entire 1012km of 148.8km/h. The last 750km in 3hrs 46min averaged 201km/h (108.6kt!).

On the second 500km Tug found "the most remarkable sea breeze front stretching as far as the eye could see." He reached the TP at 12000ft cloudbase without circling and then returned by using lee wave alongside the front. He writes, "In magnificent smooth air I was able to return at VNE beside the superb pure white billowing cumulus."



STEMME S-10

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1.



2.

We have reproduced three oil paintings featuring gliders from the Exhibition held until July 24 at the Carisbrooke Gallery, London. 1. Michael Joseph's "Glider". 2. "Forever Vigilant" by John Dimond is an oil painting of Grob 109as, known as Vigilants by the ATC. 3. "Discus and Pegasus" by Amanda Deadman.

GUILD OF AVIATION ARTISTS' EXHIBITION



3.

SKYWATCH – A Beginners Guide to Clouds

Part 4

Tom Bradbury has divided this section into two. The second half will be in the October issue.

A. Photos A, B and C show three views of climbing in wave at Shobdon from first becoming established at the bottom (A) to reaching good conditions just above the lenticular (C).

There is an enormous variety of wave forms and much that one can learn from watching the associated clouds. Once upon a time people used to think that the only sure sign of waves was the appearance of lenticular bars across the sky. Since then most kinds of cloud have been found in wave systems and some of the strongest waves fail to produce lenticulars.

Basic conditions for lee waves

When horizontally moving air is disturbed by passing over a ridge the jolt produces a wide range of wavelengths. The speed at which waves travel depends on the wavelength. Short waves travel slower than long waves. The wave energy travels upwards and outwards from the ridge. Waves which travel horizontally move both up and downwind. If the wave travels downwind it is soon swept away. Waves moving upwind are slowed down by the current against them. When the wave speed equals the speed of the opposing wind the wave becomes station-

ary and is called a standing wave. With a low wind speed the standing wave is short. Strong winds are associated with long wavelengths.

The wave energy travels upwards as well as horizontally. It is possible to draw rays showing where packets of wave energy will go. These rays are strongly influenced by the wind speed. If the wind speed is constant with height the rays will be straight but on most wave days the wind speed increases with height. This vertical wind shear makes the rays curve.

The rays representing slow moving short waves are soon bent over as the wind speed increases. Long waves, which move faster, suffer less bending by the wind shear. The effect is shown in Fig 1. On the left hand side the increase of wind with height is shown by the length of the arrows. The speed often reaches a maximum just below the tropopause. In the stratosphere speeds are nearly always much less. Beside the wind profile are a series of rays ranging from short to very long waves. Short waves are bent over low down. The rays of longer waves extend higher before the wind becomes strong enough to turn them back. Some of the very long wave

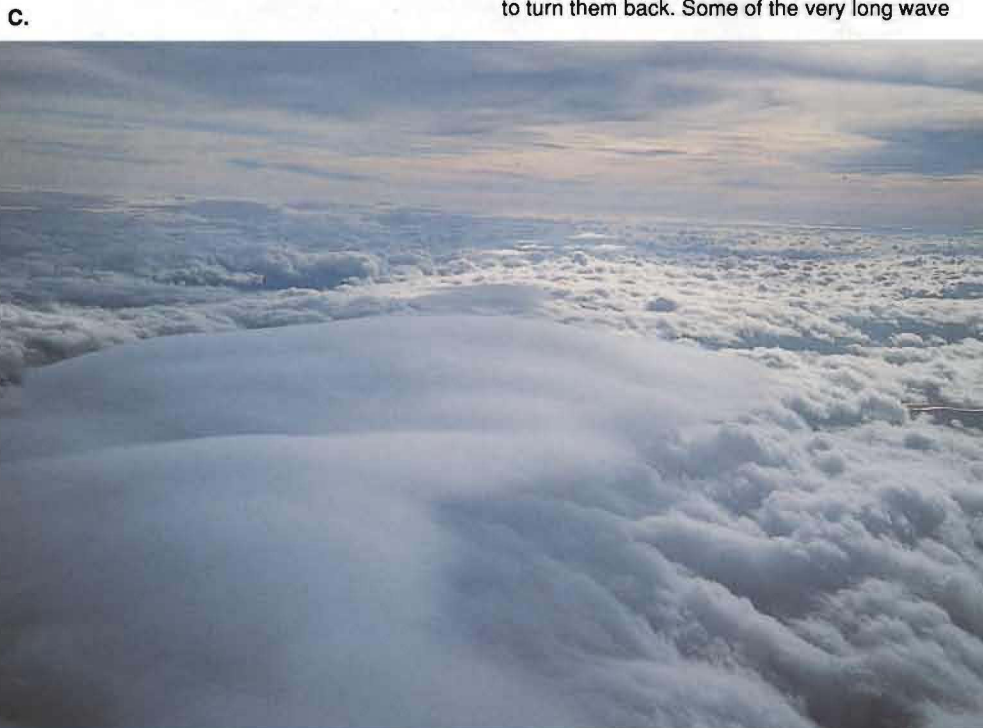
rays reach the stratosphere; there they meet a more stable atmosphere with lighter winds and the rays start to curve upwards again.

This is over simplified. To be accurate one has to include the stability of the air in the equations but in most cases the major factor is the wind speed.

Trapping wave energy

If all the rays were turned back below the tropopause the wave energy would be confined within a sort of duct like a wave guide. Such waves are said to be trapped. When reflected energy returns in the right phase the system starts to resonate; the resonant wavelength will be amplified but other wavelengths will be suppressed. Trapped waves produce a wave train which may extend downstream for hundreds of miles. When the air is moist enough to form clouds the crest of each wave shows up as a series of bars on satellite pictures.

D illustrates small amplitude waves under a strong inversion.



Guide to

on – looking at wave clouds – into
October issue



B.

tends far downwind over flat country the phase lines are normally vertical.

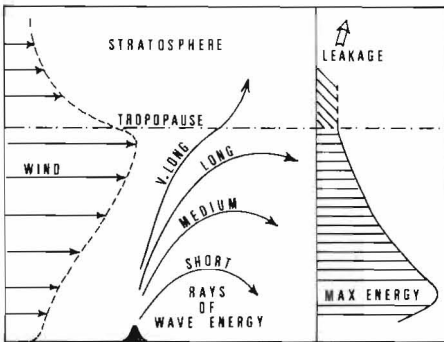


Fig 1

The right hand side of Fig 1 shows how the wave energy may be distributed. The maximum is usually found at low levels. The curve shows how the energy falls off with height, but also indicates that some can leak away into the stratosphere. This often happens when the winds aloft are not strong enough to reflect the longest waves. This is termed the "leaky" mode. The bigger the leak the more rapidly the wave train decays downstream.

The shape of simple waves

Fig 2 shows a series of streamlines of a trapped wave. At lower levels where the wind is only of moderate strength the wavelength is drawn as about 10km and the maximum amplitude (where the streamlines have their largest undulation) occurs in the lower layers. The higher you climb in such waves the less the amplitude is. Sometimes (as in this example) there is another much longer wavelength at high levels. Then the amplitude increases again and it may be possible to climb much higher. Notice the series of pecked phase lines indicating how the wave crests above the mountains tilt into

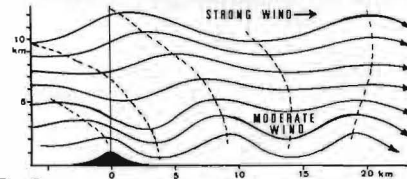


Fig 2

wind with height. This into wind tilt is common in mountain areas but where the wave train ex-

Waves with no energy reflection (untrapped)

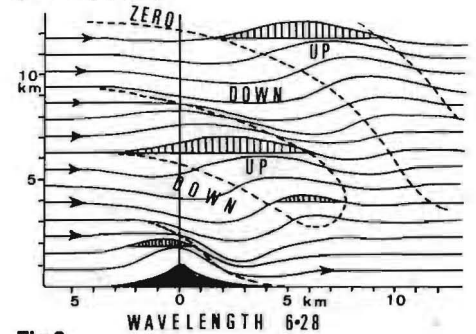


Fig 3

A wave can be formed even if none of the wave energy is reflected but in this case there is no wave train. There is just a single wave. This is illustrated in Fig 3. Just above the mountain

E shows a slot in a stratocu layer where the wave amplitude was larger. ➡



the streamlines look very like a trapped wave with phase lines (shown pecked) sloping into wind. Downstream the undulations are very rapidly damped out. There are many days when strong waves occur over the mountains but little or none of the energy is trapped. These can give good climbs but conditions are very difficult for any cross-country flying. There is no recognisable pattern to the lift once one leaves the local area. Notice how regions of lift can occur vertically above regions of sink due to the tilt of the phase lines.

Conditions which favour good wave soaring

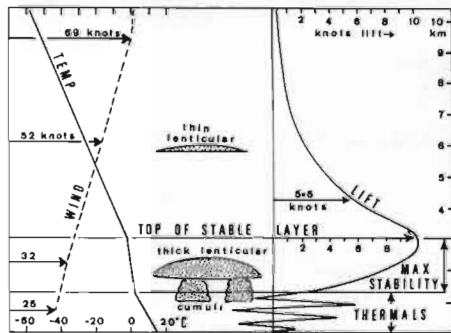


Fig 4

The left hand side of Fig 4 shows the kind of conditions which produced the majority of good wave days over the UK. The full line gives a temperature profile (values underneath). The lowest layer is unstable with convection by day. The middle layer is very stable; there may be an inversion or an almost isothermal layer. On top is a less stable layer.

The wind profile (pecked line) shows a speed of 25kt over the hill tops, 32kt in the stable layer, and then a steady increase up to 69kt at the top. The values are an average for Gold height days.

The top of the stable layer is given as 3km (nearly 10000ft). It is often rather lower. The little sketch shows cumulus clouds pushing into the stable layer where they are halted and often capped with thick lenticulars. A thin lenticular is drawn higher up but this is often in a region of weak lift.

On the right hand side is a curve showing how lift is very erratic in the thermal layer; then in the stable layer the lift gets stronger, usually reaching a maximum close to the top of the stable layer. Above that the lift slowly decreases and (unless you encounter a long wave with its maximum higher up) the climb ceases at some high level.

Some variations in lift

Fig 5 shows two simplified situations; the left hand side has stable air extending from ground level to a pecked line marked TOP INV (for top of inversion). Above this the air is much less stable. Curve A shows max lift occurs just below the top of the inversion and then dies away quite slowly as one climbs. Curve B shows a much more stable lower layer where the lift peaks well below the top of the inversion. In case B there is also a big difference in both wind speed and sta-



F shows fingers of cloud stretching across a wave slot which is often the first sign of the gap closing up.

bility between the upper and lower layers. This usually makes the lift fall off much more quickly. One can climb quite fast at first but then the lift rapidly dies away and becomes very weak, often limiting climbs to below 10000ft. If the lower layer has a very strong inversion while the upper layer has very little stability and a strong wind too then almost all the wave activity is confined within the stable layer. Such waves behave like waves on the surface of water and some Met papers refer to them as "hydrostatic waves". They are good for cross-country flights but seldom much good for height climbs.

G. The wave slots are no longer visible from low down; billows on the cloud top suggest wind shear above the inversion.

The right hand side shows the more usual shallow convective layer at the bottom capped by the stable layer. Curve C shows erratic lift in

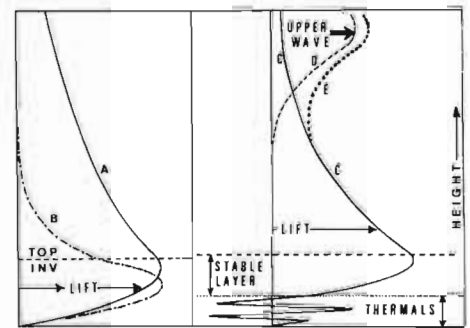


Fig 5

the thermic layer and then the usual decay of lift at high levels. However sometimes there is a



second and longer wave aloft which produces a lift pattern like the pecked line D. Where the two waves are in phase one can add D to C to get the dotted curve E. This makes really high climbs possible for people with patience and a full oxygen cylinder.

Wavelength, windspeed and lift

About thirty five years ago it was noticed that the wavelength and wind speed were linked by a simple empirical formula.

$V = 6L + 10$ V is the wind speed in knots in the wave layer, L is the wavelength in nautical miles. Thus with 40kt one would expect a wavelength of about 5nm or just over 9km. Do not expect great accuracy from this method!

There are several relatively simple mathematical models which allow one to calculate lee wavelength and lift on the assumption that the wave energy is trapped. The easiest method is a graphical scheme first described by Casswell in the *Meteorological Magazine* in 1966. It has been widely used and later appeared in an article in *S&G* by Mike Garrod. The results are often fairly good but the system failed on many of the best wave days because it uses just two layers.

Wally Wallington wrote a lot about waves in the 1950s and produced a three layer model which differed from the older two layer models in having a convective layer at the bottom as shown in Fig 4. The addition of an unstable convective layer makes wave possible on more occasions. Wallington's three-layer model is more tedious to program but gives better results. Like all schemes which assume trapped waves it fails on days of deeper instability and/or strong low level winds. On these days wave energy is

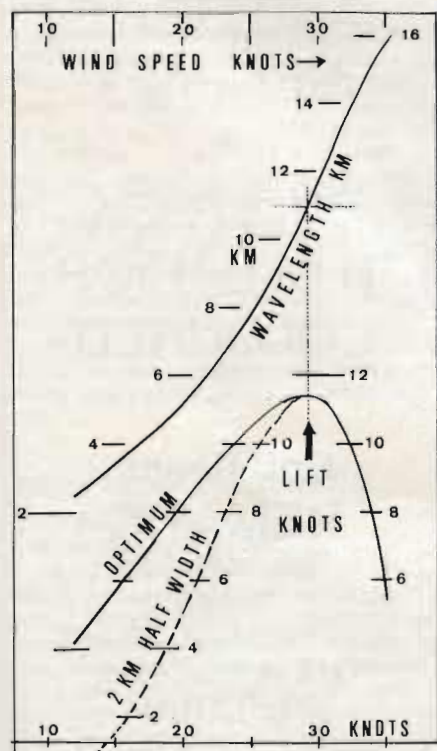


Fig 6

not completely trapped. The development of large cumulus adds a further problem which has only been solved by using a big computer.

A system adapted from Wallington was used to get the curves shown in Fig 6. This case assumes an isothermal layer between about 3500 and 7000ft and a mean wind of 50kt between about 10 and 30000ft. The diagram shows what happens as the wind speed changes at the lower levels. The speed in knots is marked at the base and top. The upper curve shows the wavelength. As the lower wind speed increases from 12 to 35kt the lee wavelength increases from just over 2 to a maximum to 16km. The stronger the wind the longer the wavelength.

Lift is hard to predict

Working out the lift is more complicated than finding the wavelength. The value depends on the height of the mountain (assumed in this case to be 0.5km or roughly 1600ft) and the width of the mountain. Big mountains cause a larger displacement but this is ineffective if the cross-section of the ridge does not fit the lee wavelength. Long lee waves need a broad ridge, short waves work best with a narrow ridge. In practice ridges are all shapes and sizes so one cannot get any reliable results. However this need not stop us doing the sums.

The lower part of Fig 6 shows how lift would vary. There are two curves. The full line marked OPTIMUM assumes the mountain width is adjustable to fit the wavelength. The pecked line marked 2KM HALF WIDTH represents a fixed width. Looking at the optimum line one can see the lift increases as the wind speed rises until speeds reach about 30kt. After that the lift falls off and the system collapses at speeds just in excess of 35kt. This is mainly due to the depth of the stable layer. Strong winds need a deeper stable layer for trapped waves. By raising the top of the stable layer to 10000ft one can accommodate winds of just over 50kt at low levels.

The pecked curve shows how much we lose at low wind speeds by having too wide a ridge. The wave length is too short to fit the topography. The best lift is again just over 11kt when the wind speed is around 30kt. Then (looking up the dotted line) one finds the lee wavelength is about 11km. However as the wind speed falls the lift drops off rapidly and becomes less than 2kt when the wind decreases below 16kt.

These results are not to be trusted! They depend on the wind following the contours of the ridge and the waves having a smooth shape like a sine curve. In the practical world the ridges are seldom smooth or regular; the low level flow does not follow their shape but breaks away. The streamlines may, in some circumstances, become vertical or even overturn.

However it is interesting to note that very many years ago the minimum low level wind for wave off small hills was put at 15kt. More recently a summary of Diamond height climbs over the UK showed that on the majority of days the low level wind was about 30kt.

How flow can change as wind speed alters

Fig 7 shows how the streamlines may change as the wavelength alters. In A the strong wind

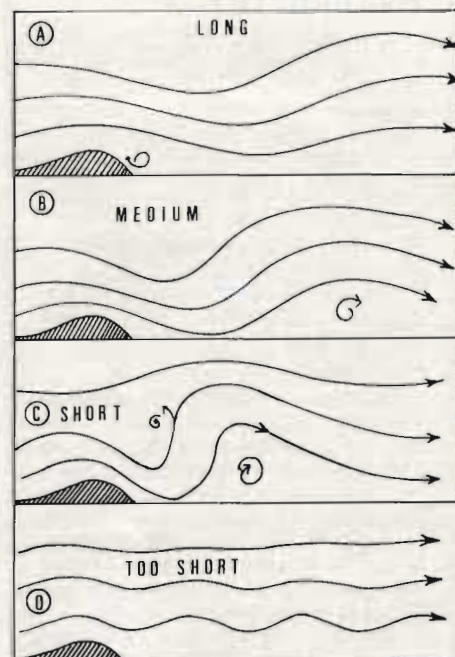


Fig 7

produces a long wavelength, so long that the flow breaks away from the lee slope leaving an eddy and often much turbulence in the valley. In B a medium wind speed shortens the wavelength and, since it fits the ridge width better, the wave has a larger amplitude and gives better lift. In C the wavelength is short. This may result in the wave steepening dramatically. In extreme cases the wave may even overturn and break producing very rough conditions. This is described in more detail in the next article. Finally D shows the wavelength much too short; the wave disappears or degenerates into shallow billows too feeble to be useful.

Observations of real waves

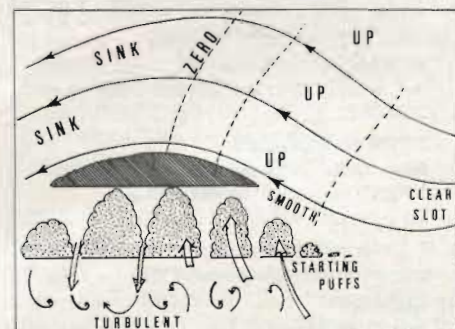


Fig 8

Fig 8 shows typical patterns of cloud and airflow in a moderate sized wave over the UK. Photo A shows the start of the climb, B the view when getting level with the lenticular and C when well established above the lenticular. The more distant cloud showed much less sign of wave; it was mainly cumulus with some gaps. The best part of the wave developed just to lee of the hills west of Shobdon and the phase lines had a distinct upwind tilt. The best lift was ahead of the lenticular and higher up one needed to move out

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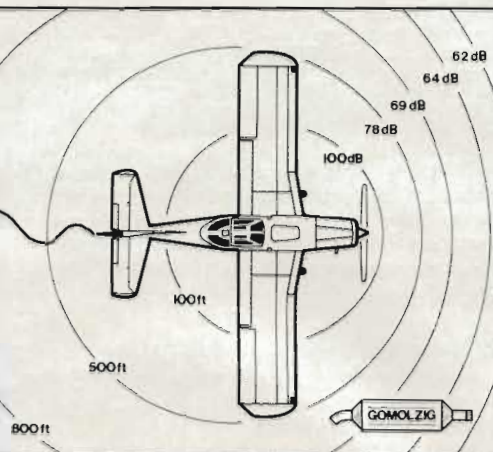
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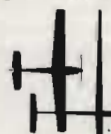
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over the wave slot. The upwind tilt makes wave jumping rather a test of patience. Moving forward at high speed one reaches the crest of the lenticular and expects to find lift just beyond. Often the lift does not start until one has reached or even passed the leading edge.

Lenticular clouds

A long ridge usually produces a fairly even wave bar but the lift usually varies as you fly from end to end. A fairly thick lenticular is often a good indication of the best part of the wave. The much thinner lenticulars higher up look attractive but often turn out to be indicators of high level moisture rather than powerful lift. On some days these very thin and high lenticulars are part of a different wave system far above most of the soarable waves.

Starting puffs

At low levels the best indications of the start of wave lift are the little scraps or puffs of cloud which appear out of nothing just in front of the main cloud bar. These fragments of cloud grow into proper cumuli as they drift downwind. They are fairly reliable markers for the start of a climb. From the ground one can watch these puffs grow into proper clouds in a minute or less but when flying the change is harder to spot.

Real waves often change, sometimes quite rapidly

Mathematical models which are simple enough to be run on an elementary school computer show that some waves are very sensitive to small changes in the wind speed or stability. An increase of only 5kt in the low level wind, or a small reduction in the depth of the stable layer can disrupt the wave system. The simple models have to assume that the flow has settled down into a stable state. In practice it takes time, sometimes a matter of an hour or two, for a steady flow to be reached. Similarly when conditions do change their effect may be delayed until the system has re-adjusted itself. Large research establishments which have the use of monster number crunchers in the CRAY-N series are able to use complicated three-dimensional time-dependant nonlinear models which show how the changes develop and spread out. These high-tech methods are not always more useful than the answers given by simple models but they can bring out some surprising results.

MORE VISUAL INDICATIONS

Very stable waves

When there is a very strong inversion and winds are fairly light, in the range 20-40kt up to 5km, one usually finds a stable wave system with a short wavelength. Photo D illustrates such a day. The stratocu forming the wave bars was held below a strong inversion. The wavelength was short – values between 4.5 and 8km are not uncommon on such days – and the pattern was remarkably uniform over a wide area. Lift died out quickly above the cloud tops and became very weak above 8000. The lift often does drop

off rather quickly when the inversion is particularly strong. However while the gaps remained open cross-country flying was easy. Sink was seldom strong and lift was reliable. With such a short wave length (due to a light wind as well as a strong inversion) it was easy to cross between wave bars. The only problem on such days is the filling up of gaps.

Wave slots in stratocu

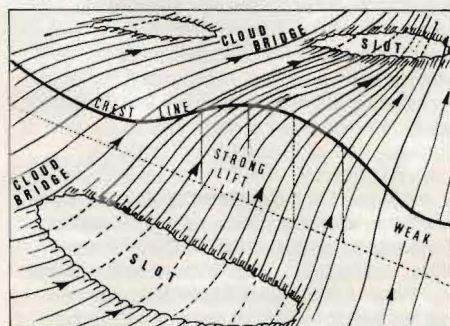


Fig 9

Fig 9 illustrates gentle wave flow with a stratocu layer tucked under the inversion. The wave slots depend on how moist the air is. Very moist air has few if any slots; their development depends on the wave amplitude. A big hill upwind often produces a local increase in the wave amplitude. Then the flow dips lower, producing a slot, and climbs higher making a dome in the cloud top. Photo E was taken over the Severn valley below Gloucester, a long way from the Welsh mountains which started the wave train. These waves are fairly common with a WNW flow round an anticyclone. On such days less sheltered places such as Talgarth have to wait longer for the gaps to appear while pilots from Usk and eastwards have useful slots available all day.

When moister air starts creeping round the high one must watch for the slots filling in. Radio calls from upwind may provide some warning of this. Fingers of cloud growing across the slots are often a sign that the moister air has arrived. (Photo F.) If caught out by closure of wave slots one may escape downwind provided there is no more high ground that way. This way one can hope to get back to the drier air which still has wave slots. It doesn't always give a safe let down. A pilot from Usk turned downwind in such a situation but his track took him across the river to where even moister air was coming in from the Bristol Channel. I was told that he finally broke cloud with only a few hundred feet to set up a landing pattern.

Photo G shows a view when the local gap filled in. It was taken from too low to show if any other gaps were still open in the area. From higher up the view is often much more encouraging. However this low view shows the little billows caused by wind shear over the cloud top. Billows on waves can be very much bigger than these.

To follow: There has only been space for a few wave features in this article. The next will describe bigger waves and the interaction between cumulus clouds and wave flow.

OVERSEAS NEWS

Please send news and exchange copies of journals to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, England

NEWS FROM BENALLA

Despite the recession down here and the coolest summer in SE Australia since the white man's records began, Benalla, the GC of Victoria, has expanded in some respects. A fifth large private glider hangar has been built with a sixth planned. There are about 40 private gliders, some available to visitors.

Our venerable engineer, Reg Pollard, is retiring (at a mere 70) and handing over to Daniel Bitton from Argentina.

Last winter there were three Diamond heights in wave, two at the Grampians range in west Victoria and the other over the Snowy mountains in New South Wales. The spring had our intrepid CFI taking part in the first south to north glider traverse of Australia from Adelaide to Darwin. A group of machines followed the road across the red centre via Alice Springs, launching from remote strips along the way.

Despite sub-standard conditions, summer cross-country and competition flying have shown a healthy growth. Over 220 000km were flown from October to April. Readers may wonder why the total isn't considerably higher in view of the cross-country days available. The answer is the locals only have so much holiday.

This has also been the only summer I can remember when there was no potential closed circuit 1000km day. However Gerard Dale from Nympsfield flew 750km and there were dozens of 500 and some 600kms.

John Williamson's cross-country courses and daily Nationals – standard Met and task briefings – are continuing to bear fruit and the less experienced cross-country pilot is becoming more confident and completing longer tasks. Many more routinely tour over our beautiful mountain country to the east rather than confine themselves to the burning plains.

Gary Brasher won the Nationals handicapped Open Class flying his Nimbus 2.

CHARLES DAY

GLASFLÜGEL CELEBRATES

On September 19-20 a Glasflügel fly-in at Untermusbach, near Freudenstadt in the Black Forest, will celebrate the Std Libelle's 25th birthday as well as commemorating their 14 different types of gliders. With the late Eugen Hänle as the designer 1346 gliders were built from the Std Libelle (600); Kestrel 17 (129); Hornet (102); Club Libelle (171); Hornet (102) to the Mosquito (200).

For further information contact Axel Reich, Panoramastrasse 9, W-7290 Freudenstadt, Germany, fax No. 010 49 7443 7728.

Please send all editorial contributions to the Cambridge address and not the BGA office.

BRITISH OVERSEAS NATIONALS

The British Overseas (Handicapped) Nationals, held at Issoudun, France from May 30-June 6 was disappointing with only three contest days.

The "Open Class" was won by Chris Garton (LS-6c) with 2353pts; Alan Clarke (Ventus CT) was 2nd, 2160pts, and Gillian Spreckley (LS-6a) was 3rd with 2022pts. The French pilot, Gilles Navas (LS-6a), flying *hors concours*, gained 2186pts.

Chris Rollings (Discus) came 1st in the "Standard Class" with 2001pts; 2nd Phil Jeffery (LS-7) with 1728pts and Eric Smith (LS-4) 3rd with 1644pts.

NATIONAL LADDER

The ladder year has started slowly in most clubs apart from Cambridge University. They dominate the top of the ladder with Phil Jeffery's 434km at 85km/h being the pick of the bunch. Now we know why the rest of us can't find any thermals; Cambridge has used them all up!

Responses on whether to change the scoring system are thin. One possibility is to increase distance points, and make speed points proportional to speed rather than speed squared. However, the system works tolerably well at the moment, and I'm disinclined to change it without more positive pressing from the clubs and pilots. If anyone has views for or against a change, contact me through your ladder steward, or direct at 85c Denmark Hill, Camberwell, London SE5 8AA.

Open Ladder

Leading pilot	Club	Fits	Pts
1. J.D.J. Glossop	Cambridge Univ	4	5851
2. J.Bridge	Cambridge Univ	4	5429
3. P.Jeffery	Cambridge Univ	4	4783

Weekend Ladder

Leading pilot	Club	Fits	Pts
1. E.W. Johnston	Cotswold	4	2576
2. T.E. MacLadyen	Bristol & Glos	2	2475
3. A.J.Davis	Bristol & Glos	1	1802

Ed Johnston, National Ladder steward

PLEA FOR TP COMMENTS AND ADDITIONS

The BGA list of TPs and Club Sites has been operating for two seasons, and the 1993 list will be issued to clubs at the AGM at Crick on February 27, 1993. The Competitions Committee intend to have an in-depth review after this season, starting this October, with the intention of finalising the 1993 edition over the Christmas break.

It has been proposed for the 1993 list, that each point is awarded a category (A,B,C,D etc) depending on how easy it is to find, using, for instance, criteria such as how it appears on the usual air maps carried by glider pilots. It has also been suggested that some points, derived from club lists existing before 1991, are difficult to find and should be changed to more obvious features; there is the contrary view that "minimum change" should be the rule. There is also a divergence of view between those who like horizontal features such as roundabouts, and photo assessors who like vertical features such as church spires and the like.

The list is, in effect, a database of information used not only for individual pilots to plot points on their cross-country maps, but also as a software database for several computer-based task setting and distance calculation programmes. Therefore, all points (within reason) in regular use by BGA members should be included if they conform to the airspace and other guidelines for the list. In terms of adding new points, some club departure points are included (such as for Booker, Dunstable, Lasham, Parham, Ringmer etc) but many clubs may have commonly used departure points which are not included. Additionally, there are various regions where there is a low density of points, for instance the north and south-west of England, and various parts of Scotland.

If you have any views, either as a club or as an individual BGA member, put them forward now if you wish them to be taken into account. Please send details to the TP Co-ordinator either via the BGA office or direct to Bentworth Hail West, Alton, Hants GU49 5LA. You can use the proforma issued as part of the list, which was reprinted with Amendment 1/92 dated May 30, 1992, and sent to all clubs by the BGA, or you can send a separate note, or telephone 0420 64195 (answer phone and fax) by the end of September, please.

Ian Strachan, BGA Competitions and Awards Committee TP Co-ordinator

BGA/SSA CO-OPERATE

We are happy to announce an extension of the co-operation between the BGA and the Soaring Society of America (SSA) to merchandise goods and magazines mutually in the UK and the US. This means that the BGA will again be selling the SSA Calendar for 1993 and details will be advertised in the next issue of S&G.

We have been importing copies of Helmut Reichmann's *Cross-Country Soaring* under a special arrangement for some while and this will continue next year with the planned revised and enlarged edition of the book. BGA members will also be able to take out subscriptions to the SSA's *Soaring* magazine in pounds sterling from the BGA office. Look out for further details in due course.

Barry Rolfe, BGA administrator

EAST SUSSEX GC FATALITIES

Two single-seater gliders launched from Kitson's Field, Ringmer collided near the site at approximately 1700ft on Sunday, May 17. Both gliders were substantially damaged and both pilots killed.

The two gliders were a club owned SZD Junior, flown by Anthony Skott, and a privately owned SZD Pirat, flown by Gareth Reason. The preliminary finding indicate there was contact between the leading edge of the Junior's port wing leading edge about 3ft from the fuselage side and the port aileron trailing edge of the Pirat just outboard of the wing outer panel (transport) joint.

The port wing of the Pirat broke off and the glider dived vertically into the ground at very high speed. The failure of the Junior's wing

near the root allowed the wing to fold back although it did not detach completely. The pilot baled out and the parachute had just started to open.

The accident is being investigated jointly by the Air Accident Investigation Branch (AAIB), Department of Transport, and the BGA.

W. G. Scull, BGA director of operations

SAFETY FLASH - MIDAIR COLLISION RISKS

The midair collision at Ringmer has prompted this warning from Bill Scull.

All pilots should be absolutely clear on the basic written and unwritten rules for soaring in thermals:

- A glider joining another in a thermal should circle in the same direction as that established by the first.
- If you lose sight of another glider in a thermal don't rely on the other pilot's lookout to ensure separation.
- When joining or leaving a thermal a pilot should fly in such a way that other gliders don't have to take avoiding action. Don't make abrupt changes of direction or speed when centring or joining or leaving a thermal . . . [*RP 19]

- No pilot should follow another glider closely, or remain flying in its blind spot, unless he is absolutely certain its pilot has seen him and knows exactly his whereabouts. [RP 20]

It only takes two gliders for a collision. If both pilots accept the other flying in their respective blind spots then the situation is fraught.

Collision is a significant hazard in gliding

Consider too the factors in baling out successfully:

- The success rate at all heights (based on German data) is only 60%. In Germany the lowest successful bale out was from 1800ft.

Rehearse in your mind the necessary actions

- The time taken to jettison the canopy, undo the straps, get out of the glider and pull the ripcord *will* be several seconds.

Consider the implications of a collision at 2000ft or less and remember:

- That the glider below you will probably catch you up towards the top of the thermal.
- And never, **Never, NEVER** fly in another pilot's blind spot; if a glider disappears in your blind spot then relocate it as fast as you can or - **get out of the thermal!**

*Recommended practice

GLIDING IN ICELAND

There is a short soaring season in Iceland – traditionally it starts on the first of May and ends in September. Night ends on May 20, hence the land of the midnight sun. There are two clubs, 20 gliders and 100 pilots. As a ratio to the population of 236 000 this would mean a UK gliding population of 23 000 club members and 4660 gliders (compared with 10 000 and 2000).

The club in the north at Akureyri is some 15km south of the town with plenty of ridges to soar. Wave soaring is the obvious prospect although heights are limited by lack of oxygen equipment. The club has a Tost winch and private aircraft for occasional aerotows. The grass airfield is shared with parachuting, powered aircraft and model flying. As well as the clubhouse and hangar there are a hangar, clubroom and workshop at the main airport close to the town.

The Reykjavik club's airfield is about 15km south of the town and has an excellent clubhouse and hangar; there is an impressive ridge close by. The national height record of 28 000ft was achieved by Sigmundur Andresson from this site. There is a club K-7, K-8 and they are seeking a replacement for their written off K-6. The CFI, Thorgeir Arnason, goes to Ridge Soaring (USA) and Fuentimilanos in Spain given the seasonal limitations in Iceland. He also co-owns a CAP 10 and is an enthusiastic and polished aerobatic pilot.

Two members of this club have developed a new site approximately 80km south-east of Reykjavik. The 400 hectares of land has three 1200m runways which will be extended to 1800m. The land is government owned and the rent £250 a year on a 25 year lease. It will take at least two years for the grass to be properly established because of the short growing season. A hangar (18 x 18m) has already been built with a clubhouse to follow.

The purpose of my visit was to give flight

safety presentations to the clubs. It was sponsored by the CAA through their director of Accident Investigation, Skuli Jon Sigurdarson. Hoskuldur Frimanson, the chairman for gliding in the Aero Club, co-ordinated the visit. All the pilots I met were keen to exchange ideas and some would like the opportunity of gliding here. The thought that comes to my mind is that twinning arrangements with UK clubs might be the best way. Reciprocal arrangements could obviously be made and anyone who did visit Iceland could be sure of a warm welcome. Any club interested should contact me for names and addresses.

Bill Scull, BGA director of operations

VARSITY MATCH ENDS IN A DRAW

This year the Varsity Match – a two day competition between Oxford and Cambridge – was at Bicester on April 25-26 and ended in a draw, breaking a four year run of Oxford wins. It was run under cupper's rules – a point for each minute of flight and two for each 100ft of height gained cumulatively. On soaring days six penalty points are deducted for each minute beyond 50min – not a rule required this year. Oxford got off to a good start on the Saturday, scratching around significantly better than Cambridge, but with better weather on Sunday Cambridge achieved a couple of 30min flights which boosted their chances. Each team's five best flights gave 177pts. Our thanks to the RAFGSA members who were very supportive. – Report by Dave Parry.

HIGHLY RECOMMENDED

It's good to hear of a bargain these days and we are having excellent reports of bunkhouse barn accommodation at Pen y Graig, 800ft on the western slopes of the Clwydian range overlooking Glyndwr Soaring Group's Denbigh site.

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INTER-CLUB LEAGUE

The final of the Inter-Club League will be at Lasham during the August Bank Holiday.

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1992
375	Jobbins, D.L.	South Wales	17.4
376	Allcoat, R.W.P.	SGU	2.5

DIAMOND DISTANCE

No.	Name	Club	1992
1/560	Galloway, J.P.	SGU	19.10.91
1/561	Warren, J.R.	Booker	18.8.91
1/562	Way, S.R.	Southdown (in South Africa)	26.12.91
1/563	Allcoat, R.W.P.	SGU	2.5

DIAMOND GOAL

No.	Name	Club	1992
2/2039	Tait, R.G.J.	Highland	26.8.91
2/2040	Foster, D.B.	Vale of WH	26.8.91
2/2041	Ustianowski, M.J.	Two Rivers	8.8.91
2/2042	Lovegrove, R.A.	Two Rivers	28.7.91
2/2043	Hill, R.	SGU	2.5
2/2044	Glennie, P.F.	SGU	2.5

DIAMOND HEIGHT

No.	Name	Club	1992
3/1081	Hallam, J.A.	Pegasus	13.3
3/1082	Jeffries, D.J.	South Wales	15.3
3/1083	Nicholls, P.	Essex & Suffolk	25.4
3/1084	Wilby, P.J.B.	Essex & Suffolk	25.4
3/1085	Mills, W.R.	South Wales	17.4
3/1086	Broom, C.E.	South Wales	17.4
3/1087	Jobbins, D.L.	South Wales	17.4

(Four heights were from Usk and two from Llewenni Parc.)

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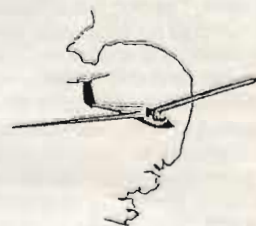
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GOLD BADGE

No.	Name	Club	1992
1610	Goodyer, B.	Mendip	17.3
1611	Merritt, K.R.	Mendip	17.3
1612	Tait, R.G.J.	Highland	26.8.91
1613	Lillywhite, K.A.	London	13.8.91
1614	Jordy, M.J.	Buckminster	11.10.91
1615	Croote, P.F.J.	Mendip	28.12.91
1616	Jones, P.J.	Mendip	28.12.91
1617	Kindell, H.W.	Lasham	18.4
1618	Dent, Evelyn	Bristol & Glos	18.4
1619	Neild, J.R.	Bicester	13.4
1620	Lovegrove, R.A.	Two Rivers	28.7.91
1621	Hill, R.	SGU	2.5

GOLD DISTANCE

Name	Club	1992
Tait, R.G.J.	Highland	26.8.91
Lillywhite, K.A.	London	13.8.91
Foster, D.B.	Vale of WH	26.8.91
Ustianowsky, M.J.	Two Rivers	8.8.91
Lovegrove, R.A.	Two Rivers	28.7.91
Hill, R.	SGU	2.5
Hopkins, Anne	Avon	3.5

GOLD HEIGHT

Name	Club	1992
Kovacs, J.P.	Deeside	23.11.91
Thomas, G.N.	Anglia	4.1
Goodyer, B.	Mendip	17.3
Turner, P.	Mendip	17.3
Merritt, K.R.	Mendip	17.3
Simpson, D.J.	Mendip	17.3
Johnson, Rosemary	Midland	21.3
Jordy, M.J.	Buckminster	11.11.91
Fisher, M.W.	Black Mountains	6.3
Croote, P.F.J.	Mendip	28.12.91
Jones, P.J.	Mendip	28.12.91
Kindell, H.W.	Lasham	18.4
Dent, Evelyn	Bristol & Glos	18.4
Purse, J.M.	Devon & Somerset	18.4
Newell, M.J.	London	15.9
Neild, J.R.	Bicester	13.4
	(in France)	
Owen, D.T.	Dorset	19.4
Brown, V.L.	Stratford on Avon	19.4
Nicholls, P.	Essex & Suffolk	25.4
Frazier, T.J.	Wolds	19.4

SILVER BADGE

No.	Name	Club	1992
8846	Cushion, T.	Dorset	5.4
8847	Baldwin, P.	Norfolk	1.4
8848	Hackett, P.L.	SGU	19.4
8849	Rudge, I.W.	SGU	19.4
8850	Kirk, R.	Wolds	21.4
8851	Clegg, M.H.	Cleveland	20.4
8852	Butterfield, K.	Lakes	22.3
8853	Jennings, J.G.	Pegasus	29.3
8854	Rignall, J.	Nene Valley	3.5
8855	Fisher, M.W.	Black Mountains	3.5
8856	Gilkes, N.J.	Portsmouth Naval	26.8.91
8857	Wales, R.J.	Booker	4.5
8858	Calvert, M.	Buckminster	10.5
8859	Brecknock, R.P.	Cambridge Univ	3.5
8860	Davis, I.R.	Staffordshire	11.5
8861	Oldbury, K.W.	Derby & Lancs	10.5
8862	Hawkes, C.M.	East Sussex	1.5
8863	Loy, R.	Southdown	11.5

UK CROSS-COUNTRY DIPLOMA

Name	Club	1992
Poundsbery, A.J.L.	Parham	5.4

The Bristol & Gloucestershire GC are planning an Old Timers' day in September/ October when they promise "nostalgia (*ad nauseam*)", old acquaintances, flying, food, drink and, if wanted, great accommodation. Ex-members interested should contact Rex Garland on 0272 563246.

Yearbook corrections: An article "What Is The BGA Doing About It?" on p23, attributed to Mike Cuming, was in fact written by Howard Torode, chairman of the BGA Technical Committee. Sorry Howard but we thought it was one of Mike's series on BGA activities. The headline to Frank Irving's article, p38, should have been "OSTIV: Soaring Cerebration" not Celebration.

BGA ACCIDENT SUMMARY

Compiled by DAVID WRIGHT

Ref Number	Glider Type	BGA No	Damage	Date Time	Place	Pilot/Crew		
						Age	Injury	Hr
1	ASW-20BL	3321	M	1.10.91 1330	Aboyne	55	N	454
In 45kt winds the pilot saw another glider had landed long on the main runway and was being cleared but still chose to land on a secondary runway still under construction. He flew too far back for the conditions and only just reached the runway, lost control in the strong wind and ran off the side, hitting a rock.								
2	Grob Twin Acro	3223	W/O	1.10.91	Lasham	61	M	81
In gusty wind the pilot had difficulty in smoothly adjusting the airbrakes on the approach. He found they snatched and were awkward to handle. However, he still attempted a short field landing near the launch point. Poor airbrake control, resulted in an "arrival" that wrote off the glider and injured the pilot's back.								
3	Capstan	1360	S	19.10.91 1360	Culdrose	48 21	N N	304 0
At about 150ft on the aerotow over a small valley the combination encountered severe sink (500-1000ft/min) and P1 released so that the tug could climb away. The glider sank into an area of small fields into which the pilot had to land. The glider struck a stone wall and was substantially damaged.								
4	K-13	1523	S	26.10.91 1105	Old Sarum	40 0	M M	304 ?
At about 400ft on a winch launch P1 prompted P2 to reduce the angle of climb, P2 responded by lowering the nose and the speed increased. The cable chute inflated and caught on the left wing. P1 took over, lowered the nose and turned back. The cable snatched, did not break and P1 recovered, but it snatched again and the glider landed on a hangar roof.								
5	Bocian	2734	M	5.10.91 1545	Galewood	0 44	N N	3000 187
During an air experience instructor training flight the canopy became unfastened and flew off. It was thought that a weak catch spring and/or P2's lack of familiarity with the rear seat could have resulted in the canopy not being fully locked.								
6	Astir CS Jeans	3512	M	19.10.91 1520	Downhill Beach	35	N	66
While ridge soaring in strong lift along a beach ridge the pilot ran into a light rain shower and sink. He had to land on the beach without enough height to make a normal circuit. He made a hurried and low final turn during which the right wingtip touched the ground and the glider ground-looped. (See also report No. 9.)								
7	Nimbus 2B	2756	S	5.11.91	Nr Lasham	42	N	340
During a field landing the glider hit a tractor rut, running across the landing direction, which turned the glider. This, and the slope of the field, caused a wingtip to touch the ground. The ensuing groundloop broke the fuselage near the fin.								
8	Falke	M/G G-BHSD	M	20.10.91 1200	Lasham	50	N	700
In a strong (10kt) crosswind the pilot touched down too fast after failing to make a fully held off landing, and the motor glider bounced back into the air. The second touch down was made with the nose down, breaking the propeller tips as they touched the ground.								
9	SHK 1	3310	M	19.10.91 1523	Downhill Beach	51	N	255
While ridge soaring in strong lift along a beach ridge the pilot ran into a light rain shower and sink. He had to land on the beach and so lowered the undercarriage. He attempted to hold the glider off long enough to cross a small stream but the glider's tail wheel caught the bank damaging the rear fuselage. (See also report No. 6.)								
10	T-21	-	S	15.11.91	Sutton Bank	37 36	N N	119 0
The pilot thought he could make one glide straight on to finals but encountered sink and, rather than selecting a field, chose to fly on. By putting the nose down then pulling up he just cleared a bank but in doing so stalled on to rough ground. The poor performance of the 1950s glider was not appreciated by the pilot.								
11	SZD Junior	-	S	23.11.91 1530	Upwood	56	N	3.75
On his first flight on this glass glider the early solo pilot failed to lock his airbrakes. These came open at 400ft on the winch launch but he did not notice this. Somewhat confused, he landed ahead as instructed for a low break and had to fly the glider on to the ground to avoid a road. The glider was substantially damaged.								
12	YS-53	1374	M	17.9.91 1400	Kenley	22 0	N N	300 0
After a heavy landing the undercarriage collapsed. However, after examination it was felt the collapse was caused by a bad repair which had not been entered in the aircraft logbook.								
13	K-21	3674	M	1.1.92	Snitterfield	49 24	N N	815 10
On a check flight during the hold-off just prior to touch down, the glider unexpectedly pitched forward and then became airborne again. It then landed slightly heavily. It appears that during a less than fully held off landing the nose wheel struck a ridge or bump and P2 over-corrected by moving the stick forward, damaging the nose wheel.								
14	DG-300	-	S	7.12.91	Sutton Bank	63	M	1500
After turning on to finals rather high the pilot attempted to sideslip off the excessive height. On straightening out he noticed a high rate of descent which he could not halt before the glider hit the ground.								
15	K-8b	2912	N	8.12.91 1500	Long Mynd	48	N	2400
The pilot found that rudder movement caused the stick to move. Right rudder moved the stick forward and holding the rudder pedals still made the elevator very stiff. After a safe landing it was found that right rudder cable overlapped the elevator push rod. The cables were 2.5mm rather than 3.1mm diameter. The glider had flown 5000 launches like this.								
16	K-23	-	S	1.1.92 1510	Long Mynd	20	N	19
The glider with the brakes open was being towed back to the hangar in 30kt winds with one man walking at the wingtip and another half way out on the other wing. A gust caught the glider and, with no one to hold the nose down, flipped on to its back and was substantially damaged.								
17	Vega	2454	S+	19.1.92 1500	Talgarth	71	M	440
While soaring a 1500-1700ft ridge the pilot entered cloud with only about 800ft terrain clearance. He then drifted behind the line of the ridge and encountered curl over and sink. Descending rapidly and probably stalled, the glider hit the ground at an angle of about 30° and broke up. The pilot escaped with minor injuries.								
18	Falke	M/G G-BMVA	M	18.1.92 1145	Nr Aboyne	39	N	1000+ 400pwr 8
P2 was having his first field landing sortie in the motor glider and P1 chose a suitable field to practise from. After a good circuit by P2, the speed was about 45kt. At this point P2 moved the stick forward and the aircraft hit the fence before P1 could recover.								

S=Serious; W/O=Write-off; M=Minor; N=Nil

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2. The unit assembled and placed alongside the fuselage.



3. The complete unit is placed alongside the fuselage and the wing is pulled out of the trailer.

A PAINLESS ONE MAN RIGGING SYSTEM

JULIAN FACK

Derek Piggott's remarks in the latest *S&G Yearbook*, p34, about the ease of rigging and lack of back pain associated with the Chevron microlight reminded me why I decided to try and improve on the "Geriatric Rigging Device" made by Angus Fleming for David Ince, which was reported on in the December 1990 issue, p300

The GRD is suitable for one man rigging on a perfectly flat hard surface, but its main use was in reducing David's effort in lifting his ASW-20's wings. Since flat surfaces are like hens' teeth at the Mynd, I took Angus's ideas and improved them in the following ways:

1. Much bigger wheels which do not sink into the soft wet ground we have for much of the year.
2. A height adjuster which can be simply operated by freeing a catch whilst lifting at the wingtip.
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4. Four rubber feet which bend out of the way when the rig is moved, but which keep it vertical and prevent it running away down a slope or in a strong wind when unladen.
5. It is very light, being made entirely of 18 gauge tube and is easy to stow in two parts in a Cobra trailer. (Photo 1.)

The unit is simply assembled by sliding the wing holder section into the telescopic central tube of the carriage section. It is then placed alongside the fuselage, (photo 2) and the wing is pulled out by the tip (photo 3) and lowered into the holder, which is vertical at this time.

The wing is held in place by two luggage straps, (photo 4) and can now be wheeled around like a barrow, (photo 5). The weight at the root is very small, and the wing can be rotated flat at any time with almost no effort. The position of the pivot is such that the wing remains stable in both the flat or the vertical position.

Holding the spar, the wing is wheeled into po-



4. The wing is dropped into the holder and strapped in.



5. The wing balances and can be wheeled around easily – no lifting.

sition until the spar enters the fuselage (photo 6). If necessary the height is now adjusted by walking to the tip and lifting there whilst pulling the cord which operates the catch (photo 8).

When the height is correct, the wing is pushed home from the tip (photo 7) and a trestle is placed under the wing whilst the other wing is installed.

Provided the trailer is facing the wind, it can be used in quite strong wind conditions as the vertical wing is pulled out downwind and rotated flat before being taken crosswind. If extra secu-

ity is required, then a helper only has to rest a hand on the trailing edge until it is flat, no lifting being required.

The Discus is easy to rig in any case, but using the rig on my own it takes about five minutes extra compared with having a competent helper. It is much faster than an incompetent one and does not move about when not required to! The only lifting required is at the tip, which is easily done with a straight back – an essential requirement for long term freedom from back trouble. ❏

6. The wing is turned flat and the root inserted in the fuselage.



7. The wing is fully inserted.



8. Adjusting the height from the tip.





David
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NEW AIR BAND TRANSCEIVER

The new ICOM IC-A20MK11 features a single knob frequency tuner which makes life a lot easier for the glider pilot using it as a hand held set, particularly as there are 20 preset memory channels available. Once one has mastered the memory channel programming sequence, the ICOM is a joy to use.

It has a 5 watt transmitter which can be reduced to 1.6 watts by pressing a button on top of the set (this also reduces battery consumption).

If you can't afford a GPS unit yet for finding your position, the ICOM has a VOR capability which can be used for getting bearings from VOR beacons or tracking to the beacons on predetermined headings using the CDI (Course Deviation Indicator) mode. Unfortunately some parts of the country are not too well endowed with VOR beacons.

There are many optional extras including external speaker/microphone or headset and many glider pilots use these sets mounted on the instrument panel and using the glider's 12 volt DC supply to run the unit. Normally the internal battery is charged from your car's lighter socket.

A comprehensive instruction booklet is included with the standard package.
B. H. BRYCE-SMITH

EUROPE AIRSPORTS

Fred Marsh, president of Europe Airsports, explains the background and aims of this association which covers the interests of the 750 000 Europeans who play in the sky

Europe Airsports was created in 1988 as a focal point for the 12 European Community's National Aero Clubs to discuss common regulatory problems. The EC want to harmonise the aviation regulations on such things as equip-

ment, pilot qualifications, airspace, environment and noise and to phase out the 12 different sets of national regulations. But this leads to problems.

Which, if any, of the national regulations will be used as a model? Will it be the most liberal or the most restrictive? Those of us involved in airsports know it is more than likely to be the most restrictive.

We also need to know what our members want and to agree on the basics so that we can present our case to the decision makers who are also being lobbied by those with much greater financial and political power, *ie* the airlines, defence forces and air traffic control authorities.

The aim of Europe Airsports (EA) is to exchange information on all regulatory matters affecting airport in the Community and co-ordinate our members' views so that we have a regulatory environment which will ensure the continued well being and growth of airport and aerial recreation.

There are some 750 000 people involved operating more than 70 000 balloons and airships, gliders, motor glider, paragliders, hang gliders, light aeroplanes, rotorcraft plus tens of thousands who parachute and as many again who are aeromodellers using airspace and radio frequencies.

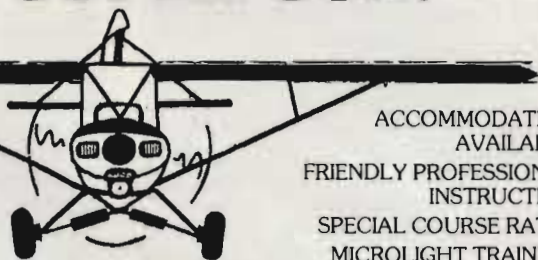
The FAI now recognise EA as an International Interest Group without rights or privileges *vis-a-vis* the FAI. The EA Council meet regularly and operate through eight sports-regulatory working parties.

Our greatest need is money. We need a full time official in Brussels to monitor regulatory matters affecting our ability to continue to practise our sports; to find out where grants etc are available within the Commission and most importantly to ensure that the EA voluntary workers are kept fully informed. We also need at least 144 volunteers in the 12 EC countries to help within the various air activities.

If you wish to help, please contact me at 17 Albany Court, Palmer St, London SW1H 0AB, tel and fax 071 233 3123

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CLUB NEWS

Copy and photographs for the October-November issue should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 0223 247725, fax 0223 413793, to arrive not later than August 11 and for the December-January issue to arrive not later than October 6.

GILLIAN BRYCE-SMITH
June 10

ANGLIA (RAF Wattisham)

We had a good start to the Inter-Club League winning all Classes at Tibenham, John Hicks and Matt Jones (P2) flying 224km in the club K-13 for 2nd place in the Intermediate Class.

Matt Jones and Al Green have Silver badges and Jim Coughlan and Jason Phelps are now instructors. This month we are going to Le Blanc, France.
N.P.



Geoff Lloyd (left) of Cotswold GC with open day visitor Paul Tomlinson in the T-21.

BATH & WILTS (Keevil Airfield)

Building started on the new clubhouse/hangars and we move to The Park in July. Not before time as the military have caused us untold misery with several long exclusions at Keevil. (An article on the site will be in the next issue. Ed.)

Our Inter-Club League meeting was disrupted

Left: Burn GC's chairman, John Stirk, making a presentation to Oerlinghausen instructor Ingo Renner following a memorable course at their club. Right: Tony Flannery (Burn GC) presenting wings to his son Michael who soloed on his 16th birthday from both a winch and aerotow.



Three solos at Glyndwr Soaring Group. On the left, George Davis; middle, Julian Pellat (left) with instructor Nigel Jennings and far right Arnold Pennant.

by such an exclusion at very short notice but the Vale of White Horse GC kindly lent us their field and facilities and we had an interesting and hard fought contest.

We are selling our two Austers and buying a more powerful tug.

Ernie Ogden, our oldest member, has gone solo at 75 and Ian Seagar and Paul Tapper have resolved.

B.H.

Obituary - Peter Barton

It is with great sadness we report that Peter Barton collapsed and died whilst on the airfield.

His passion for gliding was intense although he came to it in later years after taking early retirement. Peter was a very active member and nothing was too much trouble. He was a constant and willing volunteer, extremely likeable, very popular and a true gentleman.

Our condolences go to his wife and family.

Bob Hitchin

BICESTER (RAFSGA Centre)

We have three new tug pilots, John Garrett, Mark Critchlow and Davey Rae; Murray Holland gained his Bronze and Silver badges within a few months; Giles Austin, Frank Pegg and Carl Peters have 5hrs; Alison Randle has flown 300km and there have been numerous solos, Bronze and Silver legs.

The Comps training week was a great success with tasks set every day. We have a full year with Inter-Club League weekends, Inter-Services Regionals and expeditions to Sisteron and Aboyne.

C.D.

BOOKER (Wycombe Air Park)

A mass exodus from Booker to Issoudun in May resulted in Chris Rollings winning the British Overseas Nationals (see BGA News).

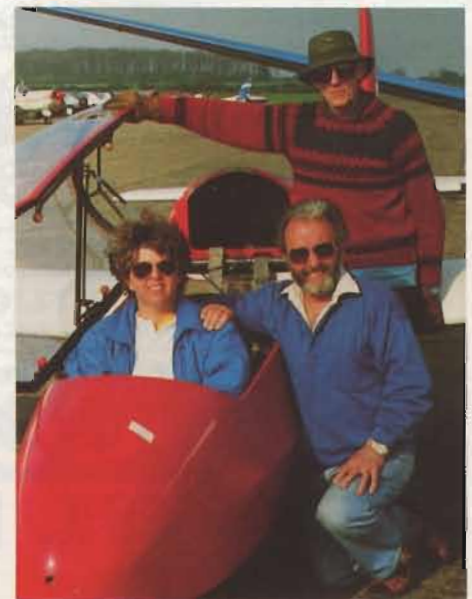
Back home Pete Wells gained Gold height in cloud; Dominic Cross, Pete Dineson and Richard Blake have gone solo, Richard flying the K-18 within two months, and Mike Mee and Sven Elgsas have flown 300kms.

The open weekend in mid May resulted in 120 trial lessons and the sale of several courses.

R.N.



Above: Paul Williams, aged ten, after his first lesson with Dick Dixon at Southdown GC. Below: Husband and wife, Neville and Lynn Cawte of Buckminster GC, who soloed within a month of each other. Arthur Keeling, their instructor, is behind.



BORDERS (Galewood)

Local advertising at Bank Holidays has helped us achieve a steady flow of air experience flights resulting in several new members. The Bijave wings have been re-covered thanks to Dave Wilson and helpers.

We have a summer task week, organised by Robin Johnson with help from Derek Robson, and autumn wave weeks. Quiet roads and unrestricted airspace help to make the flying weeks a pleasure.

A small typing error in the last issue gave the impression that we want to buy our site. In fact we already own it and want to build on that success.

R.C.

BRISTOL & GLOUCESTERSHIRE (Nympsfield)

Nicola Witt, John Lewis and Chris Bowman have soloed; Ali Hole, Helen Evans and Rob Selway have flown Silver distances; Tim Milner (course instructor) has Gold distance and Chris Witt Silver height four days after going solo.

Our ecological survey, sponsored by Lloyds, is progressing well. Our thanks to Mike Strathern and Trevor Stuart for their valuable reports on the wildlife of hedgerows and field margins.

S.R.

BUCKMINSTER (Saltby Airfield)

Members have been working hard to spruce up the site. The Bronze course was very successful with badges for Richard Harwood, Andrew Snell and Martin Looms. Neville and Lynn Cawte have gone solo; Keith Hopkinson gained a Bronze badge soon after soloing; Chris Sellers (Nottingham Polytechnic GC) flew two Bronze legs on the same day and Mike Calvert has a Silver badge plus an ASW-19.

The club Astir is on line; our two open days brought many trial flights and course inquiries. Now that we are flying seven days a week why not drop in and have a flight.

M.E.

BURN (Burn Airfield)

We have increased our winching capacity by buying a winch from our twinned club at Grefrath, Germany. The Twin Astir's trailer suffered from heat on a return trip from Angers, developing banana shape tendencies which needed repairs.

Martin Wakefield has collaborated with local schools in Operation Trident, a charitable trust to encourage young people's self-development, by giving them air experience flights.

Two members have gone solo - Michael Flannery aged 16 and pensioner Geoff Smith.

P.N.

CAIRNGORM (Feshiebridge)

Our Come and Try day in May generated a lot of local interest and attracted three new members.

Alistair Morrison is again running a beginners' course; Steve Struthers has gone solo and our thanks to Sue Mossman for being our publicity officer for some years.

T.J.

CAMBRIDGE UNIVERSITY (Gransden Lodge)

Gransden Lodge is now fully operational. Our open day on May 25 was attended by those out-



Peter Poole, CFI of Surrey Hills GC (left) with Mr and Mrs Richard Ottaway, their local MP and his wife, and the crew of the helicopter emergency medical service.



Above: Ernie Ogden, aged 75 years, who has gone solo at the Bath & Wilts GC. Below: Tim Woodward of the Cotswold GC after his first solo.

Ben Moor who soloed on his 16th birthday at the Northumbria GC.



side the club who have been so helpful in getting us established – our thanks to the social committee for their superb efforts then and for the clubhouse opening party.

Aerotows are available every day and winching two weeks in every three as well as every Friday and at weekends.

Terry Slipper and John Birch have gained assistant instructor ratings; Robert Welford and Phil Atkin AEI ratings; Mike Langton a Silver badge; Jim Tee a Bronze badge and John Young has gone solo.

J.L.B.

CHANNEL (Waldershare Park)

The K-7 has been repainted; we have another club single-seater; two Motor Falke on site and a syndicate Mucha which attracts a lot of interest and a little envy.. Nick Powell has gone solo and Cliff Middleton has resoloed.

We are flying six days a week and evenings to suit demand; started the social season with a treasure hunt and are grateful to all our hard working members.

N.O.A.

CLEVELANDS (RAF Dishforth)

A quiet two months. Chris Bulteel and Doug Stewart have gone solo and Derek Smith has an instructor rating and completed his Gold badge.

J.P.

COTSWOLD (Aston Down)

The Bank Holiday open day on May 4 was highly successful with trial lessons for 219 visitors. With the need to average one launch every 3min, our additional towcar arrived from the USA just in time. Eight gliders were used ranging from T-21s to the SF-34. This brought in new members but we still have vacancies for *ab-initio* training.

Chris Webber, Miles Wigfield and Tim Woodward have gone solo and Frank Birlison, Dave Gardiner and Mike Shailes have Bronze badges.

M.S.

COVENTRY (Husbands Bosworth)

The committee were re-elected at the AGM. Dave Asquith retired as chairman and we thank him for his many years' service. Roger Goodman has become deputy tug master, Martin Chamberlin an assistant instructor and we welcome Neil, our resident course tug pilot.

Yet again our task week was all but a wash-out with one good day.

We are celebrating our 40th anniversary with a dinner-dance on November 21. From September tickets will be available from Harry the manager.

T.W.

CRANWELL (RAFSGA)

There have been lots of achievements, particularly Nev Weir's 500km in France; "Skippy's" performance at the Comp training week at Bicester earning a place in the Inter-Services Regionals; Nick Hawley's Silver height and duration; Ian Mountain's 100km; Emma Smalley's solo and Bronze leg and Hugh Moonie's 2½hrs and second Bronze leg.

Friday evening and weekend flying are very

A missing word. You must have noticed. At last we have done without that much overworked word, congratulations. It always seemed superfluous as it is obvious everyone is pleased when a member makes progress. So take it as read that when you get a Bronze leg or break a record S&G congratulates you.

busy, membership continues to increase and we have a replacement for our T-61A motor glider. We had a good expedition to Glyndwr – our thanks to the club – and we next visit the Long Mynd.

I.M.

CULDROSE (RNAS Culdrose, Helston)

Pete Endean and Dave Uren gained their assistant instructor ratings on a course at Culdrose when the Perranporth Motor Falke was put to good use by Bronze pilots for field selection practice. Darren Robinson has a Bronze leg and Peter Green his 5hrs.

Our thanks to Roy Richards and JLJ for overhauling the tow truck; to Robbie Robinson and Paul Williams for repairing the Capstan and Angie Toller for organising some cracking good socials.

R.A.

DARTMOOR (Brentor)

We are in the best part of our season with the prevailing westerlies giving way to easterlies producing wave over Dartmoor as well as strong thermals. This has helped our air experience groups and brought in new members.

We have 11 instructors, the latest being Roger Willis Fleming from Totnes; 15 gliders on site with the arrival of a Skylark 3 and over two thirds of members are solo pilots, nearly all starting with us as *ab-initios*.

F.G.M.

DEESIDE (Aboyne Airfield)

Ben Vdick has gone solo; John Douglas has his Silver badge; Paul Boath and Charles Wilson their AEI ratings and Bill Neill Gold height after completing his Bronze badge.

On May 14 Jack Stephen took his DG-100 on a 570km O/R to Skye on a 9hr flight in SE wave.

Our extended clubhouse is nearing completion and Norman Smith is building a wall round the car-park.

G.D.

DERBY & LANCS (Camphill)

The early season brought varied soaring conditions with early solo pilots enjoying weak south-westerly wave. Di Leary has gone solo and Peter Rivers has re-soloed after 37 years.

Our annual open day was a tremendous success – we introduced a seemingly endless queue to gliding in good weather – as was the task week and the BGA soaring course when, in both cases, goals were achieved and new targets set. Steve Robertshaw was the only pilot to complete his task during the Inter-Club League at Rufforth – Doncaster O/R, all flown below 2000ft.

Our thanks to Chris Garton, BGA Airspace Committee chairman, on visiting us and shedding some light on airspace.

We are building a hardstanding area for trailers, giving us virtually unlimited space for new syndicates and visiting pilots who are welcome throughout the year.

M.I.R.

DORSET (Old Sarum)

We have finally found a site – Eyres' Field which is a return to Dorset after a long exile in Wiltshire. We are working on the hangar footings and other vital services and hope to move as soon as possible.

Dave Owen was 3km short of Gold distance but some fine Scottish wave gave him Gold height. Tim Cushion has Silver height (incidentally he gained his 5hrs at the Mynd the day the Arm-Chair Pilot thought it unsoarable and landed in the field, see the February issue, p24) and Vic Phillips and Bernie Shackle have AEI ratings.

E.B.

DUKERIES (Gamston Airport)

There was a large attendance at the AGM in April when we reviewed a successful year highlighted by the completion of the hangar, the re-covering of the club K-7 and buying the club K-8. Cups were awarded to Glenn Barratt, Barrie Codling and Keith Gregory.

Nick Wright has his Bronze badge and Nick, Graham Goucher and Peter Uden have joined John Cook's Pirat, making it our sixth syndicate.

J.C.P.

EAST SUSSEX (Ringmer)

Recent events have been overshadowed by a tragic accident in which Gareth Reason and Tony Skott died after a midair collision (see BGA News). The club sends its deepest sympathies to Trina and Sue.

The (ex-club but now syndicated) K-6 has had an extensive refit and its first flights at Talgarth gave 5hrs for Richard Goodsell and Mike Burgess, Mike and Clive Hawkes completing their Silver badges. The trips to Talgarth and Denbigh resulted in many other Silver legs.

There was a magnificent cake at a party to celebrate Ray Brigden's BGA diploma (see the last issue, p156). Steve Barter and Ian Bull have assistant instructor ratings.

L.M.

ENSTONE EAGLES (Enstone Airfield)

Paul Noonan took over from Karen Thompson as secretary at the AGM in April – our thanks to Karen for all her efforts during the last five years – and David Wardell is on the committee. Ken Sparkes, chairman, reported on the excellent progress in negotiating a new lease.

Visiting pilots please note that we no longer have use of the main runway 08/26 but the grass strip, together with most of the grass on the airfield south of the runway, is landable where cut.

Our new 4.2 Jaguar No. 2 winch is giving launches in excess of 2000ft, even for the Twin Astir, and these will be improved when winch No.1 is fitted with a Rolls Royce 6.7 litre unit.

The entries for the Regionals (August 8-16) are filling up well. Derek Carpenter, Peter Green, Tim O'Sullivan and Richard Markham have gone solo. The unlimited launch courses have given great satisfaction and we have a record number of evening groups for trial flights.

R.J.P-B.

ESSEX & SUFFOLK (Wormingford Airfield)

A memorable spring expedition to North Wales resulted in Diamond heights for Pete Wilby (ASW-19) and Peter Nicholls (Libelle). Back at base John Friend (Oly 2B) gained Silver height. Our trusty Condor has left to tug in Scotland after many years of happy flying in Suffolk.

The USAF veterans who used to fly from Wormingford had a memorial service to celebrate their new monument in memory of the brave and many enjoyed flying again above Wormingford with us later in the day.
C.J.R.

GLYNDWR (Denbigh)

We had an excellent start to the season with first solos for Arnold Pennant, George Davis, Julian Pellat and Ray Cronin; Bronze legs for Kenny Clewarth, Geoff Holland, Louise Kennington, Lyndsay Bird and Dave Townsend; Silver heights and durations for Chris Fox and Ian Gilbert; Gold height for Phil Wild and an AEI rating for John Dean who did over 100 flights in his first fortnight. On May 10, one of our best thermal days, Dave Bullock's 10min check flight with Lyndsay Bird lasted over 4hrs.

Our recently acquired tug gets us to the excellent wave systems in the Vale of Clwyd and our site record is now over 24 500ft.

Our thanks to Laura, Helen and Sue for successfully organising the start of the barbecue season and to Porki and Geoff on their sponsored moustache and beard shave which raised over £50 for muscular dystrophy.
G.H.

GRAMPIAN (By Laurencekirk)

We have had very successful trials with stranded cable and can now sell or barter great lengths of piano wire. What have you to offer? Phone our CFI, Al Eddie, on 0241 53232.

Dave Smith has his Bronze badge and our launch rate increases each weekend.
R.J.S.

HUMBER (RAF Scampton)

We hosted the Inter-Club League for Trent Valley but only had one task day due to strong winds.

Our DG-300 has been replaced with a Czech Discus which Dave Cockburn flew in the Overseas Nationals at Issoudun with John Dobson flying a Ventus. Al Docherty has Silver height and Joe Hutton Silver distance.

We are celebrating our 25th anniversary with an August Bank Holiday party.
D.M.R.

KENT (Challock)

There were eleven members on the advanced course run by CFI Mike Kemp and an enjoyable expedition, led by Alan Garside, to Abbeville, France.

We hosted the Inter-Club League over the Bank Holiday with 14 out of 15 completing the task on the Monday.

Mike Allan and Martin Bradley have their Bronze badges.
J.W.

MENDIP (Halesland)

At our 17th AGM in May George Whitcombe-Smith, Dave Townend and John Alcock joined the committee. Our very successful open day attracted a substantial number of new members. Our thanks to Graham Taylor and his team for their hard work.

George Whitcombe-Smith and Steve Collins have Silver distances and Patrick Hogarth a Bronze leg. Ray Snelling and Ken Wiseman have done a superb job refurbishing the club K-6CR and are now working on the trailer.

The courses are selling well and we hope to fly seven days a week during July and August. We have the temporary use of a Pawnee for aerotows.

T.A.D.H.

MIDLAND (Long Mynd)

The second of our two May open days attracted many visitors. Mid week pilots enjoyed a superb westerly wave evening on May 6 and we flew in easterly wave later in May. A group has gone to Sisteron.

Keith Simmons, Al Holst, Alan Turner, Ray Bucknell, Eddy Humphries and Robin Sherwin-Smith have gone solo; Dave Cummings has a Bronze badge; Henry Morris Silver distance; Steve Valentine Silver height and duration; Ron Huggins and Ian Davis have Silver badges; Rose Johnson a Gold badge and Graham Underwood flew Diamond height at Aboyne. Alistair Self is now an assistant instructor and Paul Garnham a fully rated instructor.
A.R.E.

Obituary – John Butler

John Butler, a recent member, sadly died on May 3 in a gliding accident near Seattle, USA. In 1961

he went to work in the University of California, moving in 1965 to Washington University Hospital to direct research into pulmonary medicine. He was highly respected in the medical world.

John started gliding in 1946 in Germany while in the Army and soon after joined the Midland GC. He was a gentle man, always ready to listen, full of good humour, modest and no mean pilot. We will remember him with much affection and respect and send our sympathy to his five children and the rest of his family.
Charles Green

NENE VALLEY (RAF Upwood)

We had an enjoyable weekend visit to Cranwell GSA in June – our thanks to them all. Mel Bain has returned to the States; Dave Mansfield and Martin Reynolds have gone solo and Jim Rignall and Gary Johnson have Silver badges.
D.H.

NORTHUMBRIA (Currock Hill)

Gary Oldfield has his AEI rating, Susan Hall gained Silver height and 5hrs at Portmoak and Ben Moor soloed on his 16th birthday.

A syndicate headed by our CFI has an ex RAF Venture motor glider, awakening much interest in navigation and field landing sorties. We were unfortunate in not getting a grant for a two-seater and are looking for assistance or sponsorship to help us update our fleet.
R.D.

OXFORD (Weston on the Green)

We have done well in the Inter-Club League and John Gordon (Std Cirrus) had a cloud climb to 12 500ft. Chris Buck has gone solo and Chris Emson has his full Cat instructor rating.

Our new briefing room is taking shape nicely.
F.B.

PETERBOROUGH & SPALDING (Crowland Airfield)

Club ladder competition is hotting up; George Willow has gone solo and we have bought a Puchacz, the second on site. This is in addition to our Bocian and two single-seaters.

The annual dinner was a great success with the CFI's trophy going to Lois Thirkill.

Les Rigby suddenly found himself giving an unauthorised AEI flight to a mouse who calmly sat on his knee. Needless to say Les didn't have the longest flight of the day.
D.K.P.

Obituary – Frank Nixon

It is with great sadness we report the death of Frank Nixon, our oldest member. Frank was very popular and flying two weeks before his death. Our sympathy goes to his wife and family.
David Penny

PHOENIX (RAF Brüggen)

Trev Box, Greg Brevern, Andy Brown and Andy Van Dongen have gone solo; Ian Keylock and Greg Brevern have Bronze legs with 5hrs for Greg; Martin Clegg has completed his Silver badge with 5hrs and Jo Colters flew Silver height and Del Ley Gold height at Sisteron, France.

Sisteron was deemed a success despite the

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only good day being the last. The season started well at Easter with Bronze legs and 5hrs almost commonplace.
M.C.

PORTSMOUTH NAVAL (Lee on Solent)

We have had a good start to the season with the Easter course producing many solos. John Bradbury has gone solo; Chris Morshead and Robin Martin have Bronze badges and on May 3 Tony World, Geoff Clark and Nigel Gilkes defied the fabled sea breeze and flew to Bicester.

Our thanks to Ian Hammond for much effort on tug refurbishment.
Y.C.

RATTLESDEN (Rattlesden Airfield)

Gordon Barnes and Trevor Grady have gone solo and Reg Smith and Roger Firmin have Silver heights.

On May 30 we again hosted the American 144 Bomb Group when 45 of the 150 flew in light aircraft before being entertained to an excellent lunch prepared by Karen and Mark Wright and helpers. On the Sunday there was a memorial service in Rattlesden church.
M.E.

SACKVILLE (Risley)

Our new twin drum winch is giving good consistent launches; Scott Powis has gone solo and we have expeditions planned to the Long Mynd and Talgarth.

Whilst one of our tugs was away for servicing it suffered at the hands of vandals and a hangar door fell on it – has anyone spares for a Rallye 180?
D.W.

SCOTTISH GLIDING UNION (Portmoak)

At our AGM we were delighted that Bill Walker MP has become our president.

April and May were good with 52 flying days and a high number of launches. The cross-country week from April 26 was a roaring success with Diamond goals for Peter Glennie, Ray Hill and Dave Bruce; Gold distance for Kevin Dillon and Silver distance for Ian Poole. Richard Allcoat landed at Sutton Bank on a failed 750km but covered 521km for Diamond distance, while Colin Hamilton stayed in Scotland for a 550km wave flight in less than 5hrs.

Mike Carruthers has his assistant instructor rating; Ian Poole, Graham Niven, Dave Clempson and Ross Jones AEI ratings; Ian Rudge a Silver badge; Peter Hackett and Nick Wales Silver distance; Neil Goodie Gold height and Ian Meacham, Robert Nerici, Eric Kettles and 16 year-old Stuart Mileham have gone solo.

We have hosted groups from other clubs with many visitors gaining badge legs. Jim Pursey (Devon & Somerset) flew 45hrs 30min in one week including Gold height and Craig Lowrie (Southdown) had five wave flights above 10000ft in nine days.
G.N.

SOUTHDOWN (Parham Airfield)

The season has started well. We fly on Tuesdays with priority given to trial lessons – our thanks to Sue Hill, the organiser. We had a successful ex-

pedition to Talgarth in April with much fine mountain soaring.

Reg White, Andy Taylor, Nicki Marchant, Steve Williams and David Ruys-Jones have gone solo; Kevin Pickering has a Silver badge and Tony Poundsbury a Cross-country diploma.
W.R.S.

Obituary – Peter Hurst



Peter in the front seat of the Eagle with syndicate partner Andy Bushby.

It is with infinite sadness that we report the death on May 5 of Peter Hurst following a brave and courageous fight against cancer.

Peter went solo during a course at Portmoak in 1979 and joined us ten years' ago. He was our secretary and then became a well respected instructor. Peter made many friends at other gliding clubs, especially Talgarth where the scenery had a special fascination for him.

He had an intense love of flying and always tried to achieve perfection in everything he did. Peter was an enthusiastic member and readily gave advice and practical help. Those who knew and flew with Peter are all the richer for the experience and he will be missed by us all.

We all send our deepest sympathy to his wife Linda and to David, Katrina and Yvonne.

Bill Sisson

SOUTH WALES (Usk)

Between December 22 and April 17 there were eight Diamond heights from Usk in wave from 20 000 to 28 500ft. The pilots were Graham Bailey, Colin Broom, Earl Duffin, Justin and Eric Fitzgerald (Eric completing his Gold badge in Australia), Dave Jeffries, Dave Jobbins and Bill Mills. There have been many other wave flights to more modest heights. Our wave normally occurs in winds from W to NE., the best altitudes being in north-westerlies set off by the Black Mountains.

Dave Jeffries and Nigel Spencer Jones have become assistant category instructors and Mike Disney has resoloed after a break of seven years.

Wave flying sessions are being planned over the winter, so contact Peter France, CFI, for details.
N.S.J.

STRATFORD ON AVON (Snitterfield Airfield)

Vic Coleman, Roy Wood, Vic Harding and Neil Twilton have gone solo and June Harris, Geoff Bridgewater and Nigel Wall have Bronze badges. Nigel has since gained two Silver legs and Rob Hatton his 5hrs in our new Junior.

The Sutton Bank expedition was better for sun tanning than flying. As we are a winch site, Dave Benton, our new CFI, took nine to Lasham for aerotow training and everyone was cleared.

Phil Picket and Eric Lown are rebuilding the 1943 Weihe Philip Wills brought over in a Dakota immediately after the war. It was flown with great success by Lorne Welch in the 1950 World Championships in Sweden as well as in many British Nationals by Wally Kahn.

STRUBBY (Strubby Airfield)

The Bocian has had a refit and paint job, thanks to hours of work by Steve Crozier and his crew. Harry Fleet has gone solo and Chris Ormsby flew both Bronze legs on the same day.
R.G.S.

SURREY HILLS (Kenley Airfield)

The season started well with Bronze badges for Richard Swires and Dave Williams. An expedition to the Long Mynd with the K-8 and the Skylark 4 was enjoyable despite adverse weather.

Our charity day on May 4, for the helicopter emergency medical service based at the Royal London Hospital, was very successful with 70 members of the public flown, including the helicopter crew, raising £450.
P.A.P.

THRUXTON (Thrupton Airfield)

We had strong start to the season with launches up, a second Blanik, a re-engined tug and a number of badge successes. Sue Flanagan and Dave Arkley went solo; Gordon Burkett flew Silver distance; Paul Mayle Silver height and duration and Amy Walker and Mark Thomas have Bronze legs.
B.L.

TRENT VALLEY (Kirton in Lindsey)

We welcome visiting pilots but be aware that Hibaldstow (4nm NE) has parachute jumping at weekends and Bank Holidays.

We had an enjoyable Easter at Scampton, coming 2nd behind Camphill in the Inter-Club League.

Graham McAndrew brought a Puchacz demonstrator and flew with several of our instructors.
M.P.G.

TWO RIVERS (RAF Laarbruch)

The Sisteron expedition was a huge success with over 300hrs and lots of badge claims including 5hrs for Roddy MacRae and Joe Carrigan, Joe also gaining his Bronze badge and Silver height.

The season started well with CFI, Mike Foreman, completing a 750km triangle on May 4 in his ASW-22 which is possibly the first RAFGGA 750km in Germany.

Mick Ferguson has his full Cat rating and Mike Gazzard, Andy Gardiner and Roger Davies their assistant Cat ratings.

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There was fairly good weather for the mini Comp with over 20 competitors from Germany, Holland, Belgium and the UK with ten 400kms and 300hrs flown. Chris Gilbert came 5th in the Open Class, Jon Hill 3rd in the Club Class and Nigel Hobbs and Vince Mallon 3rd in the Wood Class. Our thanks to members who worked so hard to make it such a success.

Our best wishes to Ski, our aircraft member, while he is in the Falklands.

L.F.

ULSTER (Bellarena)

After more than 60 years of rootlessness and occasional evictions we are negotiating to buy a 50 acre field half a mile north of our present strip as our lease expires next year. It is equally well situated to the magnificent Binevenagh ridge but flatter, better drained with good road access and, unlike the present field, has mains services to hand.

Our thanks to Bill Scull for his encouragement and advice during an Easter visit and work behind the scenes. Also to BGA parliamentary spokesman Bill Walker and our constituency MP Willie Ross for bending the ear of the Northern Ireland Office's education and sports minister Jeremy Hanley resulting in a most generous grant.

The high season started late but on our open day on May 3 there were almost 50 trial flights and some new members. A sizeably UGC contingent are going to an all-Ireland task week in late June to a new venue, the Kilkenny GC.
R.R.R.

VALE OF WHITE HORSE (Swindon)

Although there were no great achievements we had a good time at our task week.

Amber Saif has gone solo; Colin Winnall has resoled and Bernard Narett has a Bronze badge.

L.C.W.

VECTIS (Isle of Wight Airport, Sandown)

Following our return to Sandown Airport Chris Waghorn and Martin Parsons each have a Bronze leg; Chris Bacon has broken the record for the longest flight over the Isle of Wight with more than 6hrs; Jim Birnie and Mac Clare-Panton have gone solo and Jim Britton has an AEI rating.

The two May Bank Holidays produced some long soaring flights with 19hrs from 20 launches, including training flights, on the best day. We have given many trial lessons and gained some new members.

Our French expedition in August is to Thouars, south of the Loire valley.

J.C.B.

VINTAGE NEWS

In the last two years ten vintage gliders have been restored or built again and flown, the last being a Gull 3 built by Peter Philpot and partners at Blackpool & Fyde GC. A second wave of over 20 gliders are now being restored in Britain and six have flown or are about to fly - the Rhönbussard (BGA 2077), with long span ailerons built by Ted Hull; a Tutor restored by David Shrimpton; a Kite 2 by Peter Warren; a Nord 2000 (Meise) by Barry Smith; a Hütter H-17A built by John Lee and the prototype Slingsby Prefect by Nev Chürcher.

The Rally at the Upward Bound Trust at Haddenham was a great success with the BAC-7, flown by its owner/builder Michael Maufe, having its longest flight ever of 45min on Sunday, May 24. That weekend was also the start of the EoN Rally at Lasham, organised by Colin Street, when two Skys, flown by Richard Moyse (in the prototype) and Brian Middleton, completed flew 140km triangles and Peter Warren (Kite 2) flew Silver distance.

The International Rally is at the Dutch National Centre at Terlet from August 5-14; the Rendez-Vous Rally at Münster/Telgte from July 30 to

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August 5 and a cross-country rally in five 100km laps from Angers to Paray le Monial, France, is from August 22-29.

The International Rally in 1993 will be at Zbraslavice, a grass airfield 70km ESE of Prague, from August 4-15.

The Vintage Glider Club after being run by five dedicated members, managed in May to elect a committee of seven according to the rules of its constitution.
 C.W.

WELLAND (Lyveden)

After many months chasing ever-changing planning regulations our hangar is finally being erected. We are thoroughly enjoying our first foray in the Inter-Club League and have had a couple of day wins.

David Strachan has flown two 5hrs, the second with a barograph.
 R.H.S.

WOLDS (Pocklington Airfield)

Our thanks to Alan Hunter who performed many miracles for us during his chairmanship. We welcome John Paskins as his successor.

There were many fine flights during our Easter expedition to Portmoak including a Gold height for Tony Frazier and 5hrs for Dave Munday, Mike Skinner and Roy Kirk (5hrs), Roy completing his Silver badge.

It is advisable to book early for our Two-seater Comp from August 16-22.

We have replaced our elderly tea bus and hope to have the modifications completed soon.
 N.R.A.

YORK (Rufforth Airfield)

We are taking part in the prestigious York Festival, which attracts over a million visitors, and expect to be busy with trial flights. The Vintage Glider Rally will coincide with its opening and we will have a ceilidh and barbecue.

Three new flying schemes are creating interest – discount flying on Fridays; one and two-day courses and five-day intensive SLMG PPL tuition. Our regular *ab-initio* courses are also well booked.

We have a new CFI, Andy Todd, with Brian Pritchard and Peter Ramsden as deputies. Melvin Mason has gone solo; Alan Jolly has a Bronze leg; Kevin Jackson, Gilly Rakusen and Bob Sansoni Bronze badges; David Rowntree Silver distance and Roy Nuza and Geoff Barnham AEI ratings.
 A.W.

YORKSHIRE (Sutton Bank)

The "beastly easterly" gave disappointing weather during the second half of May and for our task week, but an interesting weekend of elusive easterly wave. Our thanks to Mike Brook for organising the task week and a superb curry night.

Tom Goodall and Graham Farrant have Silver distances. The new DG-500 has brought our club two-seater fleet up to strength.

We were saddened to hear of the death of Maurice Sturtivant after a valiant fight against illness. The club has lost an avid supporter and he will be greatly missed.
 C.L.



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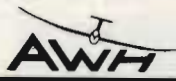
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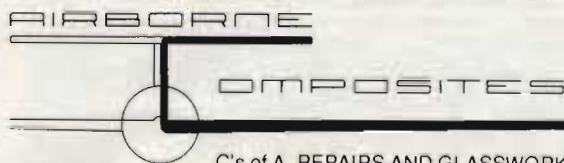
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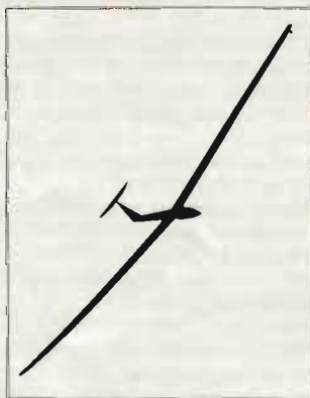
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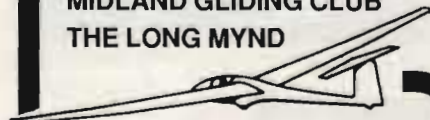
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WAY OFF TRACK



On being a bug

Imagine you're one of the trillions of mites, midges, clegs, flies and other bugs which make up British insectdom on any warm summer day. You've got your Mum's permission to go out to play and are innocently bugging about (careful how you set this Printer) in any of the billions of cubic metres of air over Britain when a long thin stretch of shaped and polished plastic composite travelling at anything between 40 and 150kt cuffs you behind the ear. Splat! – instantly you're annihilated and thinly smeared over several times what was, until a millisecond ago, your normal length and breadth.

Undoubtedly, it would spoil your day.

I'm no mathematician but it is clear that the odds against any individual gnat or gadfly meeting their Nemesis on a glider's leading edge are markedly greater than those you and I face in hoping to scoop the pools or to see a decent return on our long-forgotten "investments" in Ernie bonds.

This train of thought on the catastrophically bloody though statistically unlikely end of some of God's smaller creatures, through being foolish enough to get in the way of competition hotshots racing around a task, began as I was selflessly sponging down the leading edges of Bill Craig's aircraft at Dunstable in May.

"Come over in the spring and we'll take the Libelle away for a few days somewhere," he'd said during the dog days of winter. The fact that I'd been invited over for a few days' flying yet for the second day running was doing the menial work before *his* cross-country is merely a measure of how bitter, sometimes, can be life's cup – and what an old softie I am.

I felt relaxed about my lack of culpability in the mass slaughter of tiny innocents, however. I rea-

soned that in my unadventurous flying of whatever modest aircraft I can scrounge or hire I can't possibly deprive birds of more than a thimbleful or two of essential protein in a whole season by annihilating insects on the wing.

Unlike another columnist in these pages who, from the same site and with his cross-country prowess matched with access to such lethally effective big-span beetlecrushers as an ASH-25 and an ASW-22, must unwittingly spell the doom of uncounted thousands of little bugs.

A glimpse of the high life

A pilot from any of the smaller clubs can easily feel like a hick from the sticks at a place like Dunstable. That's not to say that I encountered anything but warmth and generosity and none of the patronising attitudes so often encountered by provincials venturing south of the Bristol-Norwich line.

(Such could not be said of *all* large southern England gliding sites. But enough of that, I'd better not get up Lasham's nose again.)

It is simply the sheer scale of investment on display: dozens of laden trailers; acres of Kevlar, carbon and GRP picketed out rigged and ready to fly; the impressive array of hi-tech gee-whizzery in the briefing room.

The larger number of up-market cars parked around the place makes talk of the south-east

suffering a recession seem like fantasy. The smooth efficiency of operations, the enthusiasm and the cross-country mileage flown even on indifferent days excite admiration while the splendid catering – characterised by wide smiles and modest prices – is the icing on the cake.

An aerotow in a T-31 to 2000ft on a very hot though only marginally soarable day and, later, an O/R to Bicester behind John Jeffries in an ASH-25 off a winch launch to 850ft, were both hugely enjoyable, representing both the extremes of the two-seater spectrum and the warmth of the welcome for a visitor.

Both types were new to me. The T-31 was still in flight development when I was gliding with the ATC. We had to make do with a few flights in a T-21 as our sole dual experience, *after* the requisite number of ground slides, low then high hops in the old Cadet. This alone indicates that though you might reasonably regard me as an old duck you certainly wouldn't mistake me for a spring chicken.

When I switched to the Libelle after flying in the T-31 I was somewhat mortified to find that, in Robert Brimfield's hands, this inelegant antiquity out-soared me, having preceded me in the launch queue yet landing some time after I was down.

As for the ASH-25 – I'll have to find a sure-fire guaranteed no-comebacks way of raiding a bank for I returned home wondering how I could ever face flying mere "cooking" gliders again.

Thanks, JJ.



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The waking dead

It wasn't at all surprising to read that the officious reaction of a flatfoot near Shrewsbury, who handed Simon Adlard a motoring ticket requiring him to produce his flying documents at a police station following a field landing, resulted from an unknown witness seeing his LS-4 landing and phoning in to report a "crash". (See the last issue, p147.)

There is an ineradicably dim section of the public, of all levels of education and otherwise apparent sense, quite unable to grasp that even a controlled landing by any aircraft anywhere off a major airport or licensed aerodrome is anything but a crash.

Personally, I've never experienced anything but the utmost help and hospitality from the fuzz after landing out. But I've sometimes encountered palpable disappointment from members of the public who have found a field landing to be something less than a drama which would otherwise have enriched their pallid lives.

It met its apotheosis on a hot summer day when I landed out only a few miles from the site but had to wait hours for the retrieve. After a group of local lads had become bored and drifted off I took out a paperback, lay down beside the nose and began to read. Insects droned; the sun beat down; my eyelids drooped.

I was awakened by the throb of a diesel a few feet away and opened my eyes to see a huge tractor looming over me. The two men aboard were clearly crestfallen when I stirred, lifted my head and said hello.

"Oh, we saw you lying there from the road as we were going home," said the younger one, at the wheel. "We thought you might be dead." ▾

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